



REPORT OF
THE HIGH LEVEL COMMITTEE
ON
BALANCED REGIONAL DEVELOPMENT
ISSUES IN MAHARASHTRA

GOVERNMENT OF MAHARASHTRA
PLANNING DEPARTMENT

OCTOBER 2013

Preface

Achieving the Balanced Regional Development of Maharashtra is one of the important Policy Goals of the State of Maharashtra. This Report seeks to bring out complexities of the issues involved and also proposes a multi-dimensional approach to achieve the Balanced Regional Development on a sustainable basis. Important elements of our approach are:

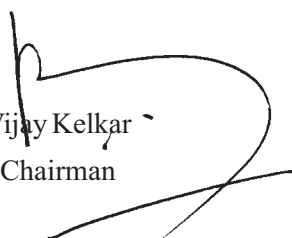
1. Increasing the shares of lagging regions such as Marathwada and Vidarbha in the Plan Funds,
2. Institutional reforms required towards capacity building for efficient use of Public Sector resources and for reducing costs of doing business for promoting private investment flows for achieving growth acceleration, and
3. Governance Reforms aimed at greater empowerment and accountability at regional level and local level so as to achieve balanced development on a sustainable basis.

We believe that the Report covers all the Terms of Reference assigned to the Committee. In fact, in some sense, we have gone further by introducing an innovative approach of covering water-stressed Talukas and Tribal Areas of our State as “Virtual or Imagined” Regions and proposing special measures to ameliorate the development challenges of these “Virtual or Imagined” Regions. Equally, we have proposed policy measures for ensuring drinking water security for all and universal health care that will take the development policy of Maharashtra at a very cutting edge. We hope that this report will shift the focus of development policies debate away from “backlog” to growth acceleration and governance reforms.

While we have fully discharged the task assigned to us, it is perhaps necessary to recognize that for our analysis and studies, we had to depend on the data provided by official agencies and which were not always comparable. Yet other limitation of our report is that it does not deal in detail the political dynamics of the regional development. Similarly, emerging development issues such as environment, employment generation and urbanization have only been flagged and not fully dealt due to constraint of time and availability of reliable data.

It is noteworthy that each Member of the Committee gave tirelessly enormous amount of their time and efforts towards completion of the Report and it was done entirely on *pro bono* basis, i.e., without any financial or pecuniary benefits. I salute them for their deep sense of commitment to achieve accelerated and inclusive development of Maharashtra.

Finally, on behalf of the Committee and on my behalf, I want to thank two outstanding professionals. First is Prof. Pradeep Apte, a leading Development Economist, who assisted the Committee in all its phases and the other is Shri K. P. Bakshi, our Member Secretary. The Committee and I want to place on record our deep gratitude to Shri K. P. Bakshi for his outstanding support and for his unique role as our friend, philosopher and guide. He is truly an exceptionally able and versatile Civil Servant and the GoM is fortunate to have his services available to our State.


Vijay Kelkar
Chairman

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GLOSSARY

1	ACP	Agri Commodity Parks
2	ACS	Additional Chief Secretary
3	ACZ	Agro-Climatic Zones
4	ADF	Animal Husbandry, Dairy Development and Fisheries
5	AFS	Annual Financial Statement
6	AICTE	All India Council for Technical Education
7	AIDC	Agro-Industries Development Corporation
8	AIDP	Agro Industry Development Programme
9	ALTS	Agriculture Labour Training School
10	ANC	Ante Natal Care
11	ANM	Auxiliary Nurse Midwife
12	APMC	Agriculture Produce Marketing Committee
13	AR	Assured Rainfall zone
14	ARI	Acute Respiratory Infection
15	Art	Article
16	AS	Sickle Cell Carrier
17	ASHA	Accredited Social Health Activist
18	ASPG	Agro Services Provider Groups
19	ATC	Additional Tribal Commissioner
20	ATS	Agriculture Technical School
21	AYUSH	Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy
22	B.A.	Bachelor of Arts
23	B.Com.	Bachelor of Commerce
24	B.Sc.	Bachelor of Science
25	BAIF	Bhartiya Agro Industries Foundations

26	BAM	Babasaheb Ambedkar Marathwada
27	BAMU	Babasaheb Ambedkar Marathwada University
28	BDO	Block Development Officer
29	BEAMS	Budget Estimation, Allocation & Monitoring System
30	BHEL	Bharat Heavy Electricals Limited
31	BMI	Body Mass Index
32	BOT	Build, Operate & Transfer
33	BPC	Block Planning Committee
34	BPL	Below Poverty Line
35	BPO	Business Processing Outsourcing
36	CAD	Command Area Development
37	CADA	Command Area Development Authority
38	CADWM	Command Area Development & Water Management
39	CAGR	Compound Annual Growth Rate
40	CBR	Crude Birth Rate
41	CC	Community College
42	CCA	Culturable Command Area
43	CEO	Chief Executive Officer
44	CEPI	Comprehensive Environmental Pollution Index
45	CETP	Common Effluent Treatment Plant
46	CFC	Common Facility Centre
47	CHC	Community Health Centre
48	CHW	Community Health Workers
49	CIDCO	City and Industrial Development Corporation
50	CIE	Co-operative Industrial Estate
51	CII	Confederation of Indian Industries
52	CIL	Coal India Limited
53	CM	Chief Minister
54	Cm.	Centimetre
55	Col.	Collectively
56	COTS	Commercial on the Shelf

57	CRF	Central Roads Fund
58	CRHP	Comprehensive Rural Health Project
59	CRIDA	Central Research Institute for Dry Land Areas
60	CRZ	Coastal Regulation Zone
61	CSS	Centrally Sponsored Scheme
62	cum.	Cubic meter
63	CV	Coefficient of Variation
64	DADM	Dry-Land Agriculture Development Mission
65	DCM	Deputy Chief Minister
66	DCR	Development Control Regulations
67	DEO	District Extension Officer
68	DES	Directorate of Economics and Statistics
69	DESU	District Extension Services Unit
70	DIC	District Industries Centre
71	DIPP	Department of Industrial Policy and Promotion
72	DIV	Division
73	DLHS	District Level Household Survey
74	DMIC	Delhi - Mumbai Industrial Corridor
75	DP	Drought Prone
76	DPA	Drought Prone Area
77	DPAP	Drought Prone Area Programme
78	DPC	District Planning Committee
79	DPDC	District Planning and Development Council
80	DRDA	District Rural Development Agency
81	DSR	District Schedule of Rates
82	DTE	Directorate of Technical Education
83	EBM	Education Backwardness Measure
84	EDP	Educational Development Plan
85	EGoM	Empowered Group of Ministers
86	EGS	Employment Guarantee Scheme
87	EHV	Extra-High Voltage

88	ESIC	Employees State Insurance Corporation
89	ESP	Electrostatic Precipitator
90	EXIM	Export Import
91	FC	Forest Conservation
92	FCI	Food Corporation of India
93	FDA	Food and Drugs Administration
94	FFC	Fact Finding Committee
95	FFT	Fact Finding Team
96	FLIM	Fodder and Livestock Improvement Mission
97	FRA	Forest Rights Act
98	FRBM	Fiscal Responsibility and Budget Management
99	FRL	Fiscal Responsibility Law
100	FSI	Floor Space Index
101	FTWZ	Free Trade Warehousing Zone
102	FW	Family Welfare
103	FWTI	Farm Women Training Institute
104	FY	Financial Year
105	FYP	Five Year Plan
106	GA	Geographical Area
107	GDDP	Gross District Domestic Product
108	GDDPCI	Gross District Domestic Per Capita Income
109	GDP	Gross Domestic Product
110	GGE	Gender Gaps in Education
111	GH	Ghat Zone
112	GIA	Grant-in-Aid
113	GMIDC	Godavari Marathwada Irrigation Development Corporation
114	GMR	Grandhi Mallikarjuna Rao
115	GoI	Government of India
116	GoM	Government of Maharashtra
117	GR	Government Resolution
118	GSDA	Ground Water Survey & Development Agency

119	GSDP	Gross State Domestic Product
120	GST	Goods and Service Tax
121	Ha	Hectare
122	HDI	Human Development Index
123	HIG	High Income Group
124	HIV	Human Immunodeficiency Virus
125	HLEG	High Level Expert Group
126	HMIS	Health Management Information System
127	Hon'ble	Honourable
128	HR	Human Resources
129	HRA	House Rent Allowance
130	HRD	Human Resource Development
131	HRM	High Rainfall zone with soil from Mixed parent material
132	HSC	Higher Secondary Certificate
133	HW	Health Worker
134	HYV	High Yield Variety
135	I&BC	Indicators and Backlog Committee
136	IAM	Institute of Agricultural Mechanization
137	IAS	Indian Administrative Service
138	IBSSA	Incentive Based Scheme for Skill Acquisition
139	ICA	Irrigable Command Area
140	ICAR	Indian Council of Agricultural Research
141	ICDS	Integrated Child Development Scheme
142	ICT	Information and Communications Technology
143	ICTC	Integrated Counselling and Treatment Centre
144	IEA	Independent Evaluation Agency
145	IEM	Industrial Entrepreneurs Memorandum
146	IEO	Independent Evaluation Office
147	IEPL	Ideal Energy Projects Ltd.
148	IGIDR	Indira Gandhi Institute of Development Research
149	IID	Integrated Infrastructure Development

150	IIM	Indian Institute of Management
151	IIPS	International Institute for Population Sciences
152	IIT	Indian Institute of Technology
153	IIUS	Industrial Infrastructure Upgradation Scheme
154	IMF	International Monetary Fund
155	IMFL	Indian Made Foreign Liquor
156	IMR	Infant Mortality Rate
157	INM	Integrated Nutrient Management
158	IP	Irrigation Potential
159	IPHS	Indian Public Health Standards
160	IRC	Indian Roads Congress
161	ISSP	Indian Statistical Statement Project
162	IT	Information Technology
163	ITDP	Integrated Tribal Development Project
164	ITES	Information Technology Enabled Services
165	ITI	Industrial Training Institute
166	JNNURM	Jawarlal Nehru National Urban Renewal Mission
167	JNPT	Jawarlal Nehru Port Trust
168	KEM	Konkan Excluding Mumbai
169	Kg./Ha	Kilogram per Hectare
170	Khar Pan Patta	Saline Area of Amravati and Akola Districts
171	Kharif Season	Monsoon Season
172	KIDC	Konkan Irrigation Development Corporation
173	KM	Kilo Meter
174	KT	Kolhapur Type
175	KVI	Key Volume Indicator
176	KVK	Krishi Vigyan Kendra
177	KW	Kilo Watt
178	KWH	Kilo Watt Hour
179	L & JD	Law and Judiciary Department
180	LHV	Lady Health Visitor

181	LIG	Low Income Group
182	LPCPD	Litres Per Capita Per Day
183	LS	Local Sector
184	LWE	Left Wing Extremism
185	M	Meter
186	m ²	Square Meter
187	m ³	Cubic meter
188	MAAS	Maharashtra Association of Anthropological Sciences
189	MADC	Maharashtra Airport Development Company
190	MAFSU	Maharashtra Animal and Fishery Sciences University
191	MAHAGENCO	Maharashtra State Power Generation Company Limited
192	MAIC	Maharashtra Agro-Industrial Corporation
193	MAIDC	Maharashtra Agro-Industries Development Corporation
194	Marathwada	Aurangabad Revenue Division
195	MASA	Maharashtra Agriculture Statistical Agency
196	MAX	Maximum
197	MBA	Master of Business Administration
198	MBBS	Bachelor of Medicine, Bachelor of Surgery
199	MCAER	Maharashtra Council for Agriculture Education and Research
200	MCAR	Maharashtra Council of Agricultural Research
201	MCL	Mahanadi Coalfields Limited
202	Mcum	Million Cubic Meter
203	MDR	Major District Roads
204	MDRC	Maharashtra Development Research Council
205	MEDC	Maharashtra Economic Development Council
206	MEGS	Maharashtra Employment Guarantee Scheme
207	MFP	Minimum Foundation Programme
208	MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
209	MHADA	Maharashtra Housing and Area Development Authority
210	MHRD	Ministry of Human Resource Development
211	MI	Minor Irrigation

212	MIDC	Maharashtra Industrial Development Corporation
213	MIG	Middle Income Group
214	MIHAN	Multi-modal International Cargo Hub and Airport at Nagpur
215	MIN	Minimum
216	MIS	Management Information System
217	MIT	Maharashtra Information of Technology
218	MJP	Maharashtra Jeevan Pradhikaran
219	MKVDC	Maharashtra Krishna Valley Development Corporation
220	MLA	Member of Legislative Assembly
221	MLC	Member of Legislative Council
222	MLD/mld	Million Litres per Day
223	MLLA	Maharashtra Land Lease Act
224	MM	Maji Malgujari (In the context of Nagpur)
225	MM	Mile Meter
226	Mm3	Million Cubic Meter
227	MMR	Maternal Mortality Ratio
228	MNC	Multi National Company
229	MNP	Minimum Needs Programme
230	MoEF	Ministry of Environment and Forests
231	MoWRGOI	Ministry of Water Resources, Government of India
232	MP	Member of Parliament
233	MPCB	Maharashtra Pollution Control Board
234	MPCE	Monthly Per capita Consumer Expenditure
235	MPHW	Multi Purpose Health Worker
236	MPLAD	Members of Parliament Local Area Development
237	MPR	Monthly Progressive Report
238	MPW	Multipurpose Worker
239	MR	Moderate Rainfall zone
240	MSE-CDP	Micro and Small Enterprises - Cluster Development Programme
241	MSH	Major State Highway
242	MSME	Micro, Small and Medium Enterprise

243	MSP	Minimum Support Price
244	MSSIDC	Maharashtra Small Scale Industries Development Corporation
245	MT	Metric Tonne
246	MTA	Million Tonnes per Year
247	MTDC	Maharashtra Tourism Development Corporation
248	mtr.	Meter
249	MTSE	Maharashtra Talent Search Examination
250	MVET	Maharashtra Vocational and Education Training
251	MW	Mega Watt
252	MWIC	Maharashtra Water & Irrigation Commission
253	MWRA	Maharashtra Water Resources Regulatory Authority
254	NABARD	National Bank for Agricultural and Rural Development
255	NAREGA	National Rural Employment Guarantee Act
256	NASSCOM	National Association of Software and Services Companies
257	N-CADA	New Command Area Development Authority
258	NFHS	National Family Health Survey
259	NGO	Non Government Organisation
260	NH	National Highway
261	NHDP	National Highways Development Project
262	NHP	National Health Package
263	NIMZ	National Investment and Manufacturing Zone
264	NIT	National Institute of Technology
265	NNMB	National Nutrition Monitoring Bureau
266	NPK	Nitrogen, Phosphorous and Kalium (Potassium)
267	NPV	Net Present Value
268	NRHM	National Rural Health Mission
269	NSSO	National Sample Survey Organisation
270	NVEQF	National Vocational Education Qualifications Framework
271	OCR	Optical Character Recognition
272	ODR	Other District Road
273	OTSP	Outside Tribal Sub Plan

274	P.G.	Post Graduation
275	PAR	Performance Appraisal Report
276	PCI	Per Capita Income
277	PDS	Public Distribution System
278	PESA	Panchayat Extension to Scheduled Areas
279	PHC	Primary Health Centre
280	PHCC	Primary Health Care Centre
281	PHN	Public Health Nurse
282	PKV	Panjabrao Krishi Vidyapeeth
283	PMGSY	Pradhan Mantri Gram Sadak Yojna
284	PPP	Public Private Partnership
285	PPP-GDP	Public Private Partnership-Gross Domestic Product
286	PRI	Panchayati Raj Institution
287	PSI	Package of Scheme of Incentives
288	PSU	Public Sector Undertaking
289	PTG	Primitive Tribal Groups
290	PURA	Provision of Urban Amenities to Rural Areas
291	PV	Photovoltaic
292	PWD	Public Works Department
293	R & D	Research and Development
294	Rabi Season	Winter Season
295	RAMM	Regional Agriculture Mechanization Mission
296	RCH	Reproductive & Child Health
297	RD	Revenue Division
298	RDB	Regional Development Board
299	RDC	Regional Development Commissioner
300	RDD	Rural Development Department
301	RDP	Road Development Plan
302	REDD	Reducing Emissions from Deforestation and forest Degradation
303	RF	Reserved Forest
304	RFI	Rural Financial Institutions

305	RH	Rural Hospital
306	RoM	Rest of Maharashtra (Pune, Nashik & Konkan Revenue Divisions)
307	Rs.	Rupees
308	RTE	Right to Education
309	RTM	Rashtrasant Tukdoji Maharaj
310	RUSA	Rashtriya Uccha Shiksha Abhiyan
311	SC	Scheduled Caste
312	SCD	Survey of Cause of Death
313	SCSP	Scheduled Caste Sub Plan
314	SD	Standard Deviation
315	SDB	Statutory Development Board
316	SDP	State Domestic Product
317	SEARCH	Society for Education, Action and Research in Community Health
318	SECL	South Eastern Coalfields Limited
319	SEZ	Special Economic Zone
320	SH	State Highway
321	SHC	Sub Health Centre
322	SHG	Self Help Group
323	SME	Small and Medium Enterprise
324	SNDT	Shreemati Nathibai Damodar Thackersey
325	SPV	Special Purpose Vehicle
326	Sq.Ft.	Square Feet
327	Sq.Km.	Square Kilometre
328	SRI	System of Rice Intensification
329	SRTM	Swami Ramanand Tirtha Marathwada
330	SS	Sicklecell Society
331	SS Projects	State Sector Projects
332	SSA	Sarva Shiksha Abhiyan
333	SSC	Secondary School Certificate
334	SSI	Small Scale Industries
335	SSSP	State Statistical Strengthening Project

336	ST	Scheduled Tribe
337	Std.	Standard
338	STDEV	Standard Deviation
339	TAC	Tribal Advisory Council
340	Tb	Tuberculosis
341	TCS	Tata Consultancy Services
342	TDD	Tribal Development Department
343	TDI	Taluka Development Index
344	TDR	Transfer of Development Rights
345	TFR	Total Fertility Rate
346	Th. Ha.	Thousand Hectare
347	TIDC	Tapi Irrigation Development Corporation
348	TINA	There Is No Alternative
349	TMC	Ten Million Cubic feet
350	ToR	Terms of Reference
351	TP	Transit Permit
352	TPP	Thermal Power Plant
353	TRDF	Technical Research and Development Fund
354	TRI	Transition Zone - I
355	TRTI	Tribal Research & Training Institute
356	TSP	Tribal Sub Plan
357	TTR2	Transition Zone - II
358	TUF	Technology Upgradation Fund
359	UGC	University Grants Commission
360	UHC	Universal Health Care
361	UIDSSMT	Urban Infrastructure Development Scheme for Small and Medium Towns
362	ULB	Urban Local Bodies
363	UMPP	Ultra Mega Power Plant
364	UNDP	United Nations Development Programme
365	UNFCCC	United Nations Framework Convention of Climate Change

366	UNFPA	United Nations Population Fund
367	Unicef	United Nations International Children's Emergency Fund
368	US	United States
369	USA	United States of America
370	USFDA	United States Food and Drug Administration
371	VAT	Value Added Tax
372	VATI	Vocational Agriculture Training Institute
373	VGf	Viability Gap Funding
374	Vidarbha	Area Under Amravati and Nagpur Revenue Divisions
375	VIDC	Vidarbha Irrigation Development Corporation
376	Viz	Used for 'for example', 'as like'
377	VR	Village Road
378	VRL	Very high Rainfall zone with Lateritic with black and red soil (vertisol & Oxysol)
379	VRN	Very high Rainfall zone with Non-Lateritic soils
380	VSI	Vasantdada Sugar Institute
381	VTDC	Vidarbha Tourism Development Corporation
382	w.r.t.	With reference to
383	WALMI	Water and Land Management Institute
384	WCL	Western Coalfields Limited
385	WHO	World Health Organisation
386	WRD	Water Resources Department
387	WUA	Water Users' Association
388	YASHADA	Yashwantrao Chavan Academy of Development Administration
389	YoY	Year on Year
390	ZP	Zilla Parishad

A TRIBUTE

Our Committee deeply mourns the sad demise of our three distinguished colleagues. Dr. Mukund Ghare passed away on the 11th of January, 2012. Dr. Kumud Bansal left us for heavenly abode on the 5th of September, 2012 and in the month of June, 2013 Dr. R.P. Kurulkar died of heart attack while he was at Aurangabad.

These colleagues made very valuable contributions to our thinking and approach. Dr. Ghare, a Geologist and expert in the field of water conservation, gave useful inputs while dealing with the issue of water scarcity in various regions of the State. Dr. Kumud Bansal's thoughts on meeting the challenges posed by demography, disparity and development in imparting quality education were very valuable in shaping the Committee's approach. Dr. Ratnakar Kurulkar acting as the Chairman of Marathwada Development Board made very valuable contributions to the Committee's work, especially on the issues related to Marathwada as well as the overall approach of Committee.

We wish to keep on record our sincere gratitude to these colleagues.

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SUMMARY

MAJOR FINDINGS AND THE RECOMMENDATIONS

1. The Approach

Keeping in view the history of the formation of the State of Maharashtra and the current region specific socio-economic-political conjuncture, the State Government, pursuant to the directives of the Hon'ble Governor constituted a High Level Committee on Balanced Regional Development on 31st May 2011.

Our Approach is based on the perspectives of the people in different regions, on the analysis of the available data, on expert knowledge from extant literature and empirical analysis derived from commissioned studies as well as subgroup reports. The suggested policy initiatives are not limited to resource allocation but are governance led and based on strategic policy reforms. We have tried to imbue our recommendations with a robust sense of realism based on our reading of the changed parametric environment in Maharashtra (derived from the global and National changes) as well as on what is attainable within the parameters of current political economy.

Our approach makes important departure from earlier approaches. The approach so far was excessively focused on physical inputs and financial allocations alone. This approach has proved to be ineffective and inadequate. It also implicitly adhered to 'One size fits all principle'. Several aspects and sources of growth, issues of Governance, supportive policies distinguished by regions were not sufficiently considered. We have emphasized greater focus on outcomes, and advocated monitoring of outcomes as the principle focus. We recognize importance of physical inputs and financial provisions as relevant policy instruments without making a fetish of them. We have suggested several policy and Governance reforms as well as different decentralized arrangement for regional planning and allocation. Similarly we have suggested formula based allocations

Our approach is participatory in the sense that committee visited all the revenue divisions and had extensive meetings attended by Guardian Ministers and other elected representatives such as MPs, MLAs, MLCs, as well as elected representatives from the Local Bodies. Apart from these the Committee importantly met several NGOs, experts and members of general public to elicit the Stakeholder's views. The learning from these has helped shape our approach and these may be encapsulated as follows:

2. The Findings

There is in evidence a great appetite for rapid inclusive growth in all the regions (poverty reducing and livelihood enhancing); there is a felt need for greater decentralization and regional empowerment; water is central to concerns everywhere and needs to be addressed in a nuanced fashion; there is a trust deficit as far as the credibility of action by the government is concerned. The levels of mobilization of capital (and hence the efficiency of public expenditure and private investment/initiative) is uneven

across regions (this is true even at an intra-regional level). Tribal areas and water stressed talukas have special and pressing development challenges. Such areas are scattered in all the three regions. To enable us to formulate appropriate policy action and measures for these areas we conceptually constructed them to be "imagined regions " or " virtual regions.” In a sense we have extended our ToR so as to take care of important development challenges facing our state.

We decided to assess the present regional development – not based on inputs but on the outcomes. To do that we identified certain number of outcome indicators and assessed the level and trends of regional development using the government data.

2.1 Income

Our review of the regional trends reveal that whereas there has been some progress in the HDI across regions and the pattern of growth at the regional level has not been too dissimilar, in the last decade there has been divergence of regional Per Capita Incomes with the ratios worsening. Please see Tables A & B and Figures A & B below.

**Table A: Per Capita Income of the Regions (2004-05 Constant prices)
(New Series Based on 2011 Census)**

(Figures In Rs.)

Sr. No.	Region	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
1	2	3	4	5	6	7	8	9	10	11	12
1	Rest of Maharashtra	23452	24771	26652	29493	32704	37491	42846	50447	61708	68818
2	Marathwada	15595	15491	16118	17409	18429	19937	24048	27552	33689	40824
3	Vidarbha	19336	19140	20913	22254	24673	25747	30711	35134	42093	52282
4	Maharashtra	22803	23072	24370	26220	29015	32174	36884	42151	49630	60708

We have measured regional disparity in terms of Per Capita Income of the regions. Table A shows Per Capita Income of region measured at constant prices. Table B shows relative inequality amongst the regions. It expresses Per Capita Income of Marathwada and Vidarbha as ratio to Per Capita Income of Rest of Maharashtra measured. It is observed that PCI of

**Table B: Ratio of Per Capita Income of the Regions
(Marathwada and Vidarbha to Rest of Maharashtra)**

Sr. No.	Region	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
1	2	3	4	5	6	7	8	9	10	11	12
1	Rest of Maharashtra	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2	Marathwada	0.66	0.63	0.60	0.59	0.56	0.53	0.56	0.55	0.55	0.59
3	Vidarbha	0.82	0.77	0.78	0.75	0.75	0.69	0.72	0.70	0.68	0.76

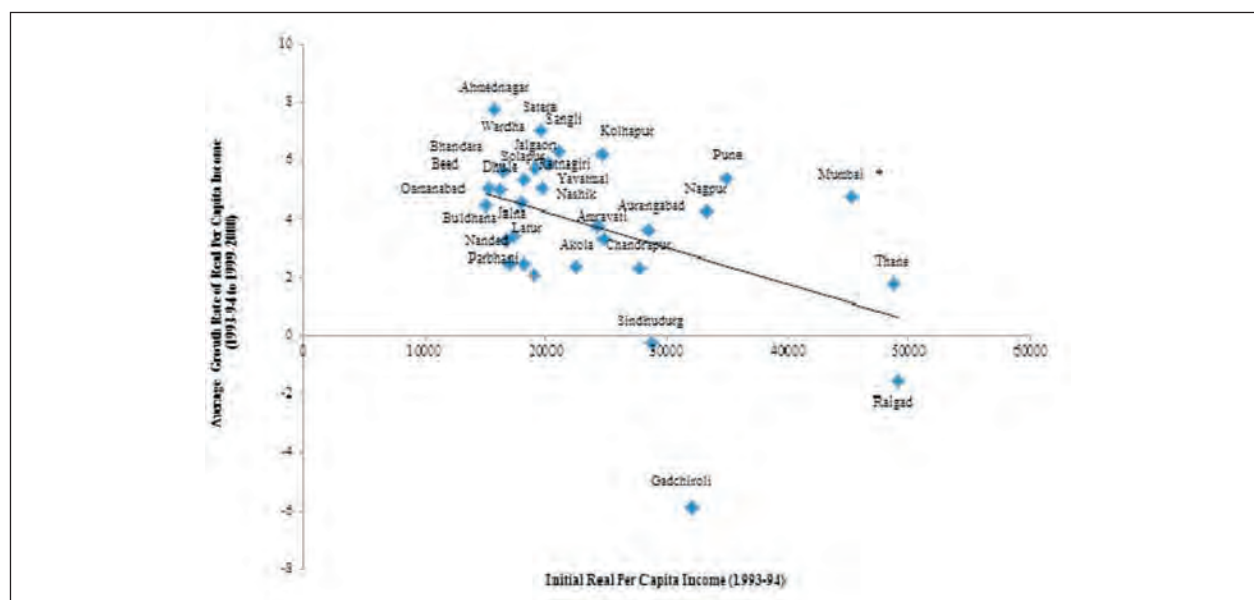
Marathwada is 40 percent lower than that of RoM. Similarly Per Capita Income of Vidarbha is 27 percent lower than that of RoM. This ratio has gradually deteriorated in Marathwada and Vidarbha during past 10 years, the preexisting disparity (0.66 and 0.82) further worsened by 0.07 and 0.06 respectively.

Available data from 1993-94 to 2009-10 indicate that regional disparities in Per Capita Income have undergone certain noticeable change. In the years of 1993-94 to 1999-2000 we observe a gradual decline in disparity (in other words moderate convergence) of district level Per Capita Income. However this trend appears to have reversed in the latter period of 2000-01 to 2009-10. This is largely attributable to negative shocks experienced by agriculture sector in Vidarbha. This is illustrated in the Figures A and B.

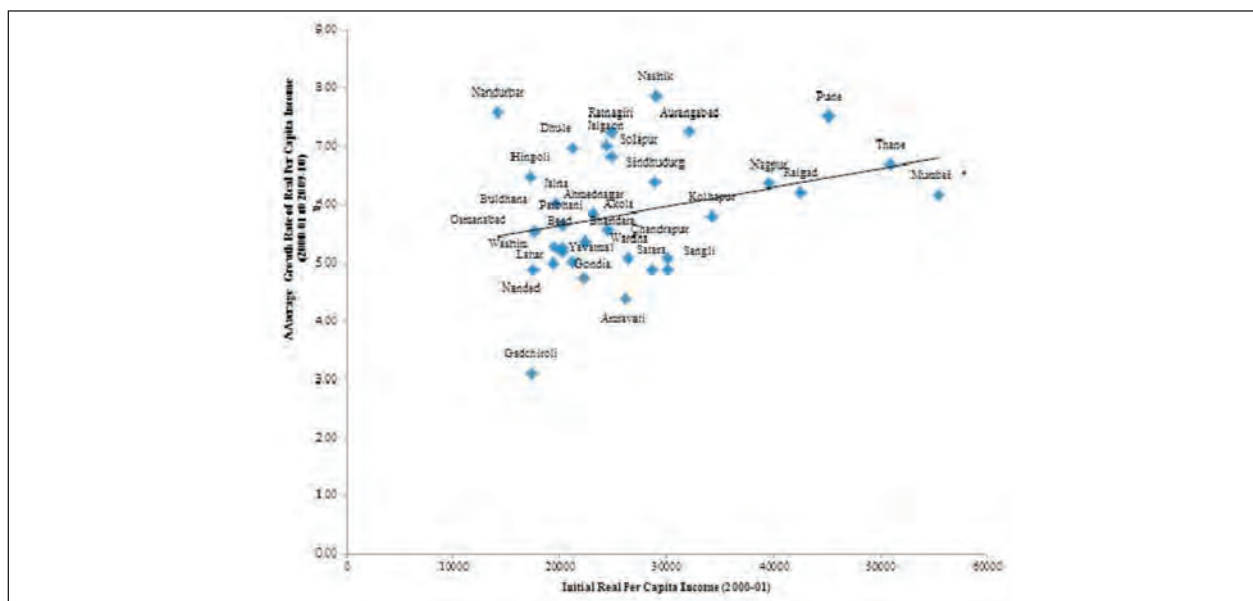
Viewed through the lenses international experience with federations as also experience of Indian states, the regional inequality or imbalance seen here would appear to be not very large. Further given the reasonable convergence in regional HDI made us look into the reasons for such angst amongst stakeholders that is palpable. We believe that the main reasons for this have to do with the baseline disparities between the agricultural or tribal areas versus the industrialized and urban concentrations which were further aggravated during the past 15 years by the change in the structure of economic activities and the regional shift in the political power in coalition governments.

These involved 1) Negative growth in agricultural income mainly in Vidarbha especially in the Amaravati division. This was partly caused by inadequate expansion in irrigation. 2) Rapid economic growth of industries and the IT sector, concentrated mainly in the Mumbai – Thane-Nashik-Pune area, but also to some extent in Aurangabad and Nagpur districts. 3) The political power, as measured by holding of powerful or resource rich ministries, was relatively concentrated in RoM and to some extent in Marathwada regions.

Figure A: Initial Real Per Capita Income and Growth Rate of Per Capita Income (1993-94 to 1999-2000)



**Figure B: Initial Real Per Capita Income and Growth Rate of Per Capita Income
(2000-01 to 2009-10)**

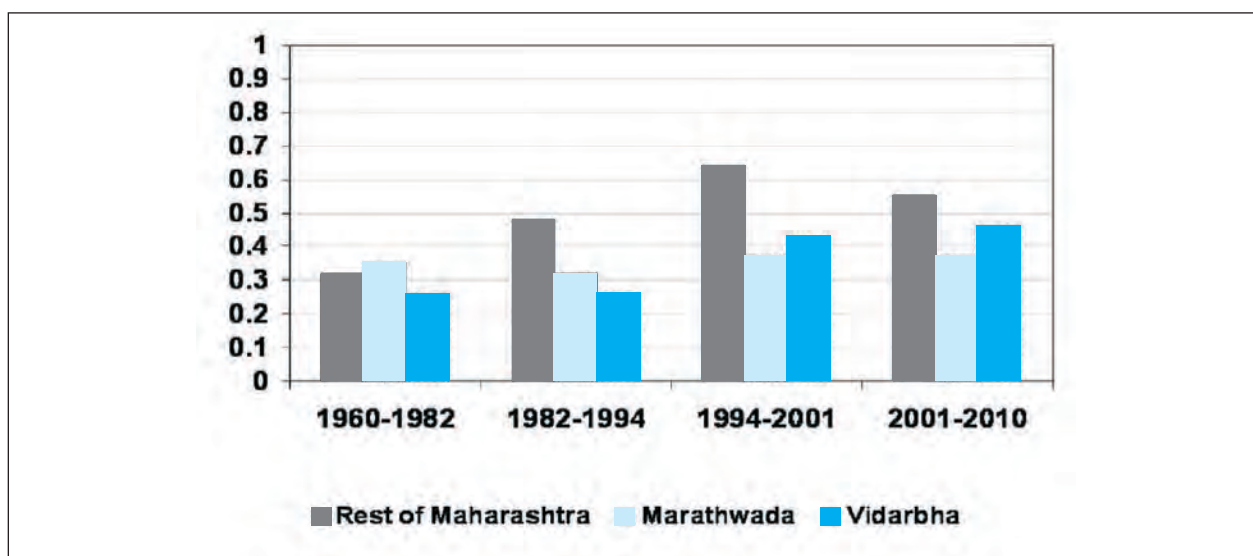


2.2 Irrigation

The irrigation grew at a faster rate in Pune division of the RoM but remained deficient especially in Amravati, so also in Aurangabad and the Konkan divisions, during the long period of 1982-2010. The Figure C shows that the annual rate of growth of irrigated land was nearly equal during 1960-82. Since then it has been higher in the RoM region for more than two decades, but the gap in growth rate has narrowed in recent years.

Figure C: Annual Rate of Growth in Irrigated Area (1960-2010)

(Rate of growth in %)



We have thus located the reasons for this in certain specific shocks (structural, economic and political) and tried to base our strategic intervention on reduction in such disparities in the Per Capita Income by a third by the end of the fourteenth plan. In certain cases, such as the tribal areas and the severely water stressed talukas, where such disparities (economic and developmental) are intense this should be achieved even earlier.

2.3 Sectoral Outcome Indicators

When measured on other **5 sectoral outcome indicators**, the proportional development deficit in three regions was Vidarbha 39%, Marathwada 37% and Rest of Maharashtra 24% .

Table C: Development Gap (Proportions)

Parameter	Weights	Vidarbha	Marathwada	Rest of Maharashtra
1	2	3	4	5
Connectivity	0.20	0.43	0.31	0.26
Education & Skill Development	0.20	0.36	0.38	0.25
Health	0.20	0.41	0.36	0.23
Credit Availability	0.20	0.36	0.37	0.27
Power	0.20	0.38	0.43	0.19
Development Gap	1.00	0.39	0.37	0.24

3. Strategy

Our approach towards the regional balance consists of two strands. Each of these two strands has multiple components and dimensions including Governance and Institutional reforms. First strand consists of equal availability of and access to specified Public goods on 'norm basis'. Such equalization would ensure minimum developmental parity across regions. Second strand consists of acceleration of regional economic growth through equitable allocation of public resources for developing relevant infrastructure. Such infrastructural enablement will itself stimulate further private investment and elicit further economic growth. Since potentials of development and comparative advantage differ across regions, relevant components of infrastructural stimulus would also differ between regions. Towards this the Committee proposes two simultaneous tracks of government policies that would ensure more rapid elimination of regional disparities. One, equalization of access to key public goods and two, strategies for accelerated growth through (i) improved supportive infrastructure, (ii) growth of the sectors in which regions have dynamic comparative advantage and (iii) appropriate incentives and policies to accelerate private investment. Such approach as recommended by the Committee would, in principle, equalize access and opportunity in all regions. The action plan recommended by us in its multiple dimensions would lead to reduction in income disparities and acceleration of growth in the lagging regions in a calibrated manner. In addition, recognizing special and urgent needs of Tribal areas and severely water stressed Talukas, we have extended the concept of a region by recognizing these areas as 'virtual' or 'imagined' regions and proposed concrete set of policy initiatives. In case of Health and Education including skill development we have aimed at norms and standards higher than those incorporated in the extant national policies.

4. Regional Growth Strategy

Achieving balanced regional development will require growth acceleration of the lagging regions such as Vidarbha and Marathwada while Rest of Maharashtra should at least maintain its growth record. The evident inference is that pre-existing income imbalances continue unabated because of inadequate and inconsistent growth rates. The growth strategies considered in this report attempt to take into account resource based view of the regions and target an accelerated sustainable development. We will require region specific growth strategies drawn upon their dynamic comparative advantage anchored in their resource endowment, locational advantage etc. We have identified such specific sectors for each of the regions and the policy reforms required to attract private investment flows as well as to remove constraints induced by extant policies. In doing this we decidedly reject the tenet of 'one size fits all'.

Implementation of policy reforms has a critical role to play in growth acceleration. Skill development, good governance, minimizing cost of performing business and 'Big Push Development Capital' that unleash externalities and spillover effects have to be addressed. The Growth Strategy will need to urgently tackle agriculture setback and exploit strengths of Vidarbha with greater resource flows from public and private sector accompanied with the necessary policy governance reforms. Development of major and minor ports, and increased cargo as well as passenger handling along the coast would boost the Konkan tourism and its commercial potential. Anticipating the future growth trends State policy should aim and plan for increasing the rail and road connectivity, and air-connectivity and an airport in every district.

5. Financial Resource Estimates till 14th Plan Period (up to 2027)

We have made a conservative estimate of the State's Plan resources for the period ending with 14th Five Year Plan. We are confident that the total resources during the next 13 years would be of the order of Rs. 23 to 24 lakh crore at current prices by the end of XIVth plan. At the same time the requirement of funds by various sectors which have been addressed in this report, along with the requirement of other sectors for which the State has to make provision (the Non-divisible plan explained later in the chapter) together would be of the order of Rs. 15 to 16 lakh crore at current prices. This estimation has been done after taking into consideration the present growth rate of expenditure of the sectors covered by the non-divisible pool and an inflation rate of 5 per cent per annum which is usually adopted by Reserve Bank of India and the Central Finance Commissions. Thus it would be clear there is enough headroom between the projected resources and the projected fund requirement till the end of 14th Plan. Therefore our recommendations in this report are completely attainable. Following are the major recommendations of the Committee.

6. Recommendations

6.1 Regional Allocation for Plan Resources

- 1 The plan resources (after deduction of SCSP/TSP) should be first divided into general sector and water sector resources in 70:30 ratio.
- 2 We have provisionally estimated the water sector deficits and allocations only for the first phase of eight years.

- 3 In water sector allocations as above, priority allocation should be made for four critically important areas namely, 'Severely Water Stressed Talukas' numbering forty four, '*Bhustar Pratikul Talukas*' numbering eighty five, '*Khar Pan Patta*' and '*Maji Malgujari Talav*' as recommended.
- 4 For each of the above priority areas separate fixed total allocations are recommended for a limited time. Rs. 1798 crore for severely water stressed talukas (44); Rs. 1732 crore for the '*Bhustar Pratikul Talukas*' talukas (85); Rs. 2520 crore for the '*Maji Malgujari Talav*' and Rs. 542 crore for '*Khar Pan Patta*'. Their relative percentages of 27.3%, 26.3%, 38.2% and 8.2% respectively be maintained throughout the limited period of allocation for these problems.
- 5 After allocating to these, the remaining water sector allocation should be made available for all water related sectors namely, Water Resources (Surface and Ground), Command Area Development, Water Conservation (Watershed) and Drinking Water & Sanitation as per the recommended proportions shown in Para. 6 below.
- 6 The percentages should be 35.26% for Vidarbha, 21.59% for Marathwada and 43.15% for Rest of Maharashtra as shown below in Table D.

Table D: Overall Water Deficit Allocation (Per cent)

Region	Weights	Vidarbha	Marathwada	Rest of Maharashtra
1	2	3	4	5
Drinking Water Deficit	50	22.39	23.01	54.60
Development Deficit	50	48.13	20.16	31.71
Overall Percentage	100	35.26	21.59	43.15

- 7 Each region should adhere to the floor levels of allocation for Water Resources Development (Surface and Ground) (50%), Command Area Development (8%), Water Conservation (Watershed) (10%) and Drinking Water & Sanitation (12%) of the remaining water sector allocations.
- 8 The remaining funds for water available at regional level after allocating at floor levels as mentioned above in Para 7, should be allocated to any of the areas covered in Paras 3 to 5 above.
- 9 General sector resource pool which is available after deducting SCSP/TSP/Water at the State level should be further divided into divisible and non-divisible components *normally* in the ratio of 60:40. The 60% of divisible funds here are to be understood as the base or floor level for allocation as per our recommendation.
- 10 Divisible and Non-divisible pool of resources be created as above and the resources kept as divisible pool resources, be distributed amongst three regions as per the Committee's formula arrived at as the 'Overall Development Deficit'. These resources to be placed at the disposal of the Regional Boards.

The divisible pool should be further apportioned amongst the three regions as per the Committee's formula. The proportions should be as given in Table E below.

Table E: Overall Percentages Excluding Mumbai (Other Than Water)

Parameter	Weights	Vidarbha	Marathwada	Rest of Maharashtra
1	2	3	4	5
Population	45	23.03	18.74	58.23
Development Gap	25	38.83	37.25	23.92
PCI	20	37.67	43.28	19.05
Area	10	31.72	21.10	47.18
Overall Percentages	100	30.78	28.51	40.71

- 11 This allocation formula applicable to the divisible pool (base 60%) and the water sector allocation put together will give the grand proportions of regional allocations from the plan resources under the 371(2) and will thus encapsulate our recommended formulaic allocations to the three regions as given in Table F below.

Table F: Overall Regional Allocation Percentages (Excluding Mumbai)

(In Per cent)

Parameter	Vidarbha	Marathwada	Rest of Maharashtra
1	2	3	4
Overall Percentages	33.24	25.31	41.45

- 12 Care should be taken to see that non plan development resources are adequately provided in all regions so as to ensure that the proposed regional development plans are successfully implemented.
- 13 Resources at the regional levels to be further apportioned as Regional, District and Block resources as suggested by Committee. The State should have four hierarchies of schemes namely, State Level Schemes, Regional Level Schemes, District Level Schemes and Block Level Schemes.
- 14 Out of the regional pool of divisible resources allocations to the DPCs (at 30% floor level) and blocks (at 30% floor levels) should be made by the Regional Development Boards, using the committee formula of allocation.
- 15 The remaining divisible resources available at the regional level should be allocated to various DPCs or various blocks or various sectors and also to projects/schemes as per regional priorities.
- 16 Floor levels are also recommended for sectoral allocations namely, 'Connectivity (Road, Rail, Port and Air)', 'Agriculture & Allied Services (including ADF & Co-operation)', Power, Public Health and Education (Primary, Secondary, Higher & Technical and

Medical) as 20%, 15%, 8%, 11% and 11% of the divisible State General Plan respectively. Regional Development Boards should adhere to the sectoral percentages at the regional level.

6.2 Governance: Towards Greater Regional Empowerment and Accountability

- 17 Restructuring and streamlining the Regional Development Boards with Chief Minister as the Chairman and senior most minister from the region as the Executive Chairman, Deputy Chief Minister, Ministers of Finance and Planning, Executive Chairman of State Planning Board, all ministers from that region, two MLAs, two MLCs, two Mayors of Municipal Corporations, two Presidents of Municipal Councils, two Presidents of Zilla Parishads, two eminent citizens from that region and two experts.
- 18 Additional Chief Secretary & Regional Development Commissioner to be the Member Secretary.
- 19 Regional Boards to prepare comprehensive Five Year Perspective Plans and Annual Plans of the Region. Plan resources to be devolved to the Districts and Blocks as per the formula suggested by this Committee.
- 20 Regional Boards to be entrusted with the responsibility of planning, supervision and monitoring of development plans in that Region.
- 21 An Empowered Group of Ministers from that region to be formed in each region under the Executive Chairman for faster decision making on the region specific problems on plan implementation.
- 22 Additional Chief Secretary rank officer designated as 'Additional Chief Secretary & Regional Development Commissioner' (ACS & RDC) to head the Regional Secretariat and be the Member Secretary of the Regional Development Board.
- 23 Key Ministries be equitably distributed amongst the three regions to promote the spirit of Nagpur Agreement.
- 24 Block Planning Committees (BPC) to be constituted.
- 25 State Government should establish a Project Appraisal Board for management of State's large PPP projects as well as for management of project specific borrowings.
- 26 A new agency, State Statistical Board to strengthen the statistical systems in the State should be established at the earliest.
- 27 New Public Policy Platforms in the form of Policy Institute and the Maharashtra Development Research Council at State level and Regional Institutes of Governance at the regional levels should be established.
- 28 Mantralaya should shift to Nagpur for a fixed period from 1st to 31st December every year.
- 29 Several Directorates should be shifted to Nagpur and Aurangabad as per the spirit of Nagpur Agreement.

- 30 Currently environmental services supplied by forests in Vidarbha are rewarded by Government of India through payment of 'Green Bonus'. However, it forms a part of Consolidated Fund of Maharashtra. We recommend that this bonus should be 'ring-fenced' for the development of the districts in proportion to the forest area as an additionality to the funds allocated to the Regional Development Boards.
- 31 The royalty earnings from mineral resources of Vidarbha should be 'ring fenced' for local area development. Also, the royalty rates should be rationally set on ad-valorem basis and should be periodically revised.
- 32 The power generated in the region should be available locally at lower rates. Similarly a part of the revenues earned from export of power to other regions should be used for rehabilitation, pollution control and local development.

6.3 Tribal Areas: Redeeming the Promise

- 33 The scope and responsibilities of the TAC should be widened by making it a 'Tribes Advisory and Development Council'. State's entire tribal development plan and its outlay be approved by the TAC before it is placed before the State Legislature and it should be monitored by the TAC.
- 34 TSP funds should be provided and used with 'additionality principle' to evolve tribal specific schemes over and above regular general schemes. TSP funds should not be used in the place of or as substitute to the general schemes or the non plan general expenses.
- 35 The Government of Maharashtra should, by an Act of legislature, make it mandatory that the TSP funds do not lapse or do not get diverted for other purposes.
- 36 The demarcation and allocation of funds of TSP should be in the following manner: Gram Sabha 50%; Gram Panchayat 15%; Panchayat Samiti 15%; District Level 10%; and State level 10%.
- 37 Total Eight districts and hundred Talukas having absolute majority of tribal population be created. These administrative units should generally correspond with the scheduled areas.
- 38 Government should urgently implement all land reforms and land distribution programs meant for tribal people by appointing a special Commission by adhering to advisories issued by the Central Government in March 2013.
- 39 The alienated tribal lands should be restored through a crash time-bound program and should not be permitted in future. The PESA and The Forest Rights Act as approved by the Central Government should be rapidly implemented, including the capacity building of tribal communities for that purpose.
- 40 'Green Bonus' should be sanctioned to Scheduled Areas, which have conserved the forest resources, on the lines as suggested by the XIIIth Finance Commission for the States in the North East.
- 41 A large scale program of education and vocational skills to two lakh tribal youth per year

- for the next ten years should be undertaken to build self-employment capacity of two million tribal youth.
- 42 There should be two tribal universities in the State. (Gondwana University in Gadchiroli to be a Tribal University and a new one in the Thane-Nashik region should be created).
- 43 The 'Scheduled Tribes Welfare Committee' of the Legislature should be reinstituted and accorded the status of a 'Standing Committee'.
- 44 The Tribal Development Index to be monitored on annual basis.
- 45 The content & quality of education and the condition of Ashramshalas must be drastically improved.
- 46 The medium of education for tribal children at the beginning should be the mother tongue. Other languages be introduced from the third standard onwards.
- 47 An appropriate and accessible pattern of health care should be made available to all tribal population and the nutrition budget for per day expenditure in the ICDS program should be increased.
- 48 Recommendations of the Child Mortality Committee of Government of Maharashtra (2005) be implemented to reduce malnutrition and child deaths.
- 49 The excise policy for tribal areas and the tobacco ban should be implemented vigorously.
- 50 The caste verification and the reservation for tribals in jobs be rigorously enforced in a time bound manner.
- 51 Funds be given, from Green Bonus and from the agriculture & forest development for the development of forests, to the tribal villages with community rights over forests.

6.4 The Role and Challenges of New Agriculture

- 52 Regional Watershed Mission for Vidarbha, Marathwada and Rest of Maharashtra be established.
- 53 Dry-land Agriculture Development Program in convergence with Watershed Mission to be implemented for increasing productivity of dry-lands within next 10 years.
- 54 Cotton Mission for Vidarbha and Marathwada, and Paddy Mission for eastern Vidarbha be established.
- 55 Regional Horticulture Mission for Vidarbha and Marathwada is recommended for next five years to develop horticulture in these backward regions.
- 56 Fodder and Livestock Improvement Mission in Vidarbha and Marathwada for next 5 years is recommended to stabilize livestock and dairy in the region for overall growth.
- 57 The New Command Area Development Authority (N-CADA) having inter-disciplinary approach, structure and manpower to achieve socio-economic development of command area be created. The functions of water control, release, utilization, crop planning and

- water use efficiency and maintenance of canals should be transferred to new the N-CADA.
- 58 There should be a mandatory shift in favour of micro irrigation technologies for high water consuming crops such as sugarcane.
 - 59 'Maharashtra Agro-engineering Company' to be created by converging and merging budget of all schemes and departments for implementation of Micro-irrigation and Mechanization programs.
 - 60 New 'Agricultural & Forestry University' for eastern Vidarbha, located at Chandrapur, is recommended for growth of the eastern Vidarbha region having entirely different agro-climatic situation.
 - 61 Institute of Agricultural Mechanization attached to each state Agricultural University and Regional Agricultural Mechanization Missions under the umbrella of Maharashtra Agricultural Mechanization Mission to be established for R&D, testing, training and demonstration of farm tools and equipment suitable for the region.
 - 62 It is recommended to have one Agriculture College for each taluka and one Agriculture Polytechnic in a cluster of villages with one lakh population to meet the human resource need of new agriculture.
 - 63 Vocational Agriculture Training Institute (VATI) for each region, attached to State Agricultural Universities, should be established.
 - 64 There should be a Farm Women Training Institute (FWTI) for each region.
 - 65 Maharashtra Council of Agricultural Research (MCAR) on the lines of Indian Council of Agricultural Research (ICAR) to be established for promoting research in the state with initial grant of Rs 500 Crore and it should be located at Aurangabad.
 - 66 District Extension Services Units (DESU) at each district head quarter should be created for effective specialized extension services to meet needs of new agriculture.
 - 67 Four regional Agro-industries Development Corporations (Vidarbha, Marathwada, Western Maharashtra and Konkan), replacing MAIDC in present form, should be created for emphasis on development of Agro-industries in the regions.
 - 68 Forestry, Fishery and Animal husbandry which together can contribute huge resources and income, have received a scant attention and resources. These need to be balanced. Towards this adequate provision for Forestry must be made by the Government.
 - 69 The forest deficient regions and districts must be given the aforestation targets as the compensatory aforestation for the projects in the forest surplus areas. This is consistent with the state forest policy to achieve 33% forest cover in all districts.

6.5 Spreading the Industrialization

- 70 Specifically a *two percent* rebate in Sales Tax and a *one percent* reduction in interest rates

- on borrowed capital from banking sector to be provided to boost the manufacturing activity and help in drawing more and more private investments in the Vidarbha region.
- 71 MSME Credit Guarantee Corporations to be created to improve access to capital for MSME sector.
 - 72 Free Trade Warehousing Zone (FTWZ) in MIHAN should be created.
 - 73 Power is one of the main inputs for Spinning & Weaving Mills. Vidarbha is getting 26 new power plants and it is recommended that power to these textile units be given at rates comparable to adjoining States of Vidarbha.
 - 74 In view of the several favourable factors in Vidarbha region, the khadi, handloom and related garment making be promoted as the small scale industry in the rural areas to provide gainful employment to 2 lakh people along with the value addition on the cotton.
 - 75 Tourism industry be especially and vigorously promoted through regional tourism development corporations.
 - 76 The forest-produce based SMS industries be developed in the forest rich districts so as to provide value addition on the forest produce and income as well as employment to the tribal people.
 - 77 Dedicated Specialized Food Processing Parks be set up for the Jowar by-products, processing of fruit, oilseeds & pulses, Soyabean & Soya products and milk & dairy products.
 - 78 State Government should declare the entire region of Parbhani-Hingoli-Washim, a 'Textile Zone' offering a special policy package for these districts.
 - 79 Technology fund to be set up specifically for upgrading Cotton Ginning and Pressing to install modern environment friendly and hygienic machinery.
 - 80 Government of Maharashtra should announce its 'Solar Policy' at an early date. Many States such as Tamil Nadu, Rajasthan, and Gujarat are successful examples of such initiatives.
 - 81 There is a need to establish an independent Aurangabad Regional Development Authority for roads, flyovers, water supply, drainage, transport depot, sports complex, trade centers, tourist attractions and green cover of the city to meet long term growth prospects. Government should take this up on priority.
 - 82 Aurangabad-Jalna to be developed as industrial corridor with an industrial township between Shendra and Jalna.

6.6 Development of Water Resources

- 83 The estimates and recommendations on water are only for the first phase of eight years. During this period a thorough verification and re-estimation of the irrigation deficit and the scope for achieving the maximum and equitable level of irrigation be made, and resource allocation decided beyond 5 years.

- 84 Actual irrigated area and the storage of water these two should be considered as the development indicator of irrigation for any calculation purpose.
- 85 The 'irrigated land' should be defined as one which receives assured water supply for at least 8 months in an year.
- 86 The four important goals in water development are
- i) To reach the level of irrigation in all divisions equal to the highest divisional level (Pune) or to the level permissible by the Tribunal.
 - ii) To achieve these levels on priority basis in Amravati, Aurangabad, Nagpur, Nashik and Konkan divisions.
 - iii) To solve the four area specific problems identified (severely water stressed talukas, '*Bhustar Pratikul Talukas*', '*Khar Pan Patta*' and '*Maji Malgajari Talav*') in the next 5 years.
 - iv) To overcome the limitations posed by the Forest Rights Act or the administrative/political will and to make complete utilization of water in the East Vidarbha and Konkan with the needs of the local population getting first preference.
- 87 For rural as well as urban areas, minimum availability norm for water should be 140 liters per capita per day. For rural areas 140 liters is inclusive of water needs of the livestock.
- 88 The financial norm for development of watershed should be upgraded and made equal to Rs. 25,000/- per hectare.
- 89 Tapi River basin is a 'deficit river basin' in terms of availability of water. Thus the State's surplus share of Narmada Waters should be utilized in the deficit basin for Khandesh Region.
- 90 Amravati region is characterized by deep black soils and '*Khar pan patta*'. Technical and economic project criteria for this region should be revised.
- 91 In the Western Maharashtra, for permanently water scarce regions, lifting of water at higher heights should be approved as a special case and watershed development should be given high priority.
- 92 For hilly regions of the western Maharashtra, distribution of water should be through pipe lines.
- 93 '*Jal-kunda*' and micro irrigation schemes should be urgently activated in the Konkan region.
- 94 For Konkan region, separate and special provisions for flood control should be explored.
- 95 For Marathwada region, the award of the tribunal restricts quantum of use of water. This award needs to be reviewed.
- 96 For Vidarbha region, amounts necessary for acquisition of forest land, displacement for forest and forest spaces is required to be paid on NPV basis. Such amounts should not be

- attributed to the projects in the region, but should be charged on consolidated fund, like that of drinking water projects.
- 97 The compensatory aforestation should be done in the forest deficient regions and districts in the state, so as to achieve regional balance in irrigation as well as the forest cover.
 - 98 *Maji Malgujari'* tanks in the Vidarbha region should be renovated and their storage capacity should be expanded so as to irrigate more than a lakh hectare of land.
 - 99 In the case of projects where density of forest areas in submergence regions is less than 0.5 (e.g. Irrigation projects in Vidarbha such as Tultuli, Karwafa) a special permission of the Governor may be sought.
 - 100 The unplanned water resource in the Vainganga-Pranhita-Indravati basin be planned in the next 5 years.
 - 101 The incomplete projects in Vidarbha be rapidly completed on priority basis and the water resources in the Vainganga and its tributaries be also used by the barrage and lift irrigation.
 - 102 To prevent pollution of water, re-cycling and re-use should be mandated to all non-irrigation uses and users of water.
 - 103 In order to reduce seepage and wastage in canal distribution systems, distribution of water through closed pipe line is recommended.
 - 104 Ground water has a substantial share in irrigation, hence it should be considered as a separate development indicator.
 - 105 The design and project planning in all basins and sub basins should be made on 50% dependability criterion.
 - 106 Amravati and Aurangabad divisions suffer from severe deficit as measured by water storage index. To remedy such severe deficit, all the local sector irrigation projects (i.e. 250 to 600 hectare projects) should be approved and the present regulations related to availability of water and other environmental regulations should be relaxed as far as possible.
 - 107 For all the regions where per hectare water availability is less than 3000 cu.m., the cropping pattern should be seriously reconsidered. There should be a ceiling or upper bound on the quantum of area for all the crops (including sugarcane) which require high quantity of water.
 - 108 In the regions where frequency of years with rainfall less than 400 mm is higher than once in ten years, there should be a special provision in the development plans for transfer of water through pipelines.
 - 109 All the irrigation projects, including large, medium and small projects, should have concept of command area development in their program of irrigation development. Accordingly, CADA should be appropriately modified and re-vitalized. Such New-CADA should be multi-disciplinary in nature including Agriculture Engineers,

Agriculture Economists, Agriculture Extension Officers, Co-Operation, Marketing & Warehousing officials from the department. Management and delivery of water on volumetric basis should be handed over to New-CADA.

- 110 Plans for Integrated comprehensive development of water basin should be completed in coming 5 years on urgent basis and MWRRA should prescribe equitable distribution of water for different uses in such comprehensive design.
- 111 The present administrative machinery should keenly adhere to the principle of delivery of water on volumetric basis for irrigation as well as non- irrigation purposes and improve the efficiency in water use.
- 112 Government of Maharashtra has already adopted the policy of delegating irrigation management to the beneficiaries. Establishment of water distribution management institutions with social participation should be considered as a high priority. In coming five years, a special drive should be taken up to create and strengthen such institutions.
- 113 Rain water harvesting should be undertaken on the basis of scientific aquifer mapping. Necessary solutions appropriate to each location and condition should be prepared on the basis of recommendations of the ground water experts.

6.7 Health: Balancing Through Universalization

- 114 There is a regional imbalance in the health sector. The estimated deficit of health in terms of a deficit score are Vidarbha (121.8), Marathwada (108.9) and Rest of Maharashtra (69.3).
- 115 Universal Health Care (UHC) be introduced in four phases for the rural (including tribal) population in the state.
- 116 In the first phase the eight districts below the health outcome score of 180 should be covered.
- 117 In the next phase UHC should be extended to the additional nine (total seventeen) districts below the score of 200.
- 118 In the third phase the rural population in a total of twenty three districts below the score of 220 be covered.
- 119 Finally in the fourth phase rural population in all thirty three districts should be covered.
- 120 By the 14th plan period, the entire state including the urban population be covered with UHC.
- 121 Several recommendations for implementing UHC including the financial coverage, health care delivery, human resource for health, management reforms, community engagement and the drugs/vaccine should be carefully planned and introduced.

6.8 Education: Beyond Right to Education

- 122 The norms and standards prescribed for key physical infrastructure in RTE and in various

other State Government policy documents must be achieved and maintained and zero tolerance policy should be adopted in this regard. Towards this adequate financial provisions must be made by the State Government.

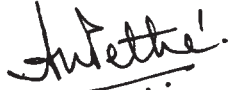
- 123 For the existing policies the Committee recommends greater attention to quality aspect and a mission mode approach to the lagging pockets related to vulnerable sections especially women (particularly in Marathwada).
- 124 Committee recommends universalizing education from VIIIth to Xth standards, as the minimum level of schooling.
- 125 Community Colleges that provide region specific courses and provide the possibility of seamless entry into the mainstream education should be opened.
- 126 One Community College be created for every block. This exercise should be completed in five years. RUSA funds should be used to the maximum extent in addition to State's own funds for this purpose.
- 127 All medical colleges and districts in general should have attached nursing colleges. B.Sc. Community Health Course should be introduced for supplementing the existing manpower in health services.
- 128 Incentive Based Scheme for Skill Acquisition' (IBSSA) be started with provision for scheme vouchers to be given for skill development in different stages. This incentivization will result in enhancing the employability and self-employment of the youth.
- 129 Under this scheme vouchers can be given for skill development in two different stages. Those who have passed the Xth standard examination would be entitled for Rs.10,000/- provided they take admission in Government approved institutes for trade specified by the concerned authority of the State. Additional financial assistance of Rs. 10,000/- would be provided to them after successful completion of the certificate courses.
- 130 The quality of the infrastructure and their maintenance (particularly reflected in the defunct toilets for girls) varies from district to district and is known to be in very unsatisfactory state. Institutional arrangement for constructing and maintaining buildings and other infrastructure needs to be strengthened, if not changed. Presently, the user does not have an adequate say in this regard. Creating a separate organization under the Education Department, both at the State and Zilla Parishad level may possibly be a solution.
- 131 School Accreditation System may be introduced particularly at the secondary level. The system could be compulsory for both, private as well as publicly funded schools.
- 132 The present arrangement for curriculum review for various vocational and technical education needs to be strengthened.
- 133 Institutions of repute in various parts of the State should be given incentives to set up their campuses in backward areas and more particularly in the tribal areas. This should cover both secondary level and technical level education.

- 134 The current government policy of no examinations up to Std. VIII needs to be reviewed, from the point of view of measuring quality of education imparted by schools.
- 135 Private universities bill should be passed and incentives should be offered by the State Government to set up private universities in backward areas of the State.
- 136 While the public sector has to play a prominent role for universalizing primary education up to the level of Std. VII, the entry of the private sector at the level of secondary education and in technical and vocational education will contribute towards improving quality of education and improving the employability of the students. Strong and effective regulatory.

6.9 Widening the Connectivity

- 137 It is recommended that, as planned by the State, sixteen roads with a total length of 7,035 km. should be developed in such a way that the eastern end of the State gets connected to the western end, and the northern end to the southern end.
- 138 Subsequently this network should be converted into National Highways for interstate communication and commercialization.
- 139 The 150 km. Mumbai-Nashik Expressway should be constructed at the earliest.
- 140 It is recommended that railways be seen as a mode for providing freight transport. Hence the State should invest more, even if it means contributing to the Central Government for construction of rail lines, so that essential infrastructure is developed for supporting rapid economic growth.
- 141 It is recommended that full economic potential of port development should be exploited which would lead to, in various ways, the growth of local economy, as also the economy of Maharashtra.
- 142 Although the State has declared its port policy which includes development of port connectivity by private developers, it is strongly recommended that the State should take up port connectivity on its own without waiting for private developers to come forward.
- 143 The State Government should follow up with the Central Government for speedy completion of the National Highway from Ratnagiri to Nagpur.
- 144 The Coastal Highway which is under construction should be completed by allocating more resources on priority.
- 145 It is recommended that considering the backward linkages and the impact on local economy of large airport operations, as identified by the State, airport development of twenty two sites should be expedited.
- 146 Government of India has taken up broadband connectivity program in a large way.

The State should provide the additional resources to the IT Department (for development of relevant regional language software) on priority so that benefits accrue at the earliest and they help in narrowing down/removing the regional imbalances rapidly.



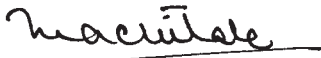
Dr. Abhay Pethe
Member



Shri. Vijay Borade
Member



Dr. Abhay Bang
Member



Dr. Madhav Chitale
Member



Dr. Vinayak Deshpande
Member



Dr. Smt. Sangita Kamdar
Member



Dr. Dilip Nachane
Member



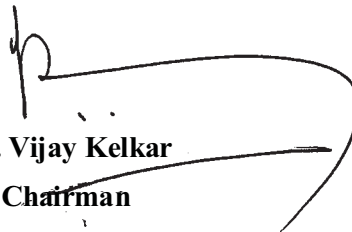
Dr. V. M. Mayande
Member



Dr. Sanjay Chahande
Director General, YASHADA
Member



Shri. K. P. Bakshi
Additional Chief Secretary
Planning Department
Member Secretary



Dr. Vijay Kelkar
Chairman

Mumbai

Date: 8th October, 2013

CHAPTER 1

Introduction

1.0 Introduction

The demand for a separate State of Vidarbha existed prior to the creation of the State of Bombay and the present State of Maharashtra under the Reorganization of the States Act. In fact, on 1st August 1938, the Legislature of the then Central Provinces and Berar, of which the region of Vidarbha was a part, had passed a resolution to the effect that eight districts of Vidarbha should constitute a separate State. This was followed by the Akola Pact of 8th August, 1947 wherein certain arrangements were contemplated in an attempt to create a federation for the areas of Vidarbha and Marathi speaking areas of Maharashtra. However, the Akola pact was never implemented. In 1948, the Dar Commission, while considering the reorganization of states, stated in its report that two Marathi speaking provinces may be created. The Marathwada region was a part of erstwhile Hyderabad State and it was under the rule of Nizam and was freed only on 17th September, 1948 due to 'Police Action' by the Government of India. In view of the growing agitation for a unified Marathi State under the 'Sanyukta Maharashtra' movement and the opposed demand for State of Vidarbha, an agreement of the leaders of all the three regions i.e. Vidarbha, Marathwada and Rest of Maharashtra, known as the Nagpur Pact came to be entered into on the 28th of September, 1953. By this agreement, it was agreed that although one Marathi speaking State could be formed, there would remain a separate allocation of fund for each of the three regions as also separate protection for the population of each region with respect to matters concerning education and employment in government services. A copy of the said Nagpur Pact dated 28th September 1953 is enclosed herewith and marked as Annex 1.1.

With a view to reorganizing the states, the Government of India set up a States Reorganization Commission in December 1953, which came to be known as Fazal Ali Commission. In its report in 1955, the Commission recommended the formation of a separate State of Vidarbha. The recommendations of the Commission for creation of a separate State of Vidarbha were not accepted by the Government of India. However, in order to give a constitutional recognition to the contents of the Nagpur Pact, the Joint Parliamentary Committee proposed the 7th Constitutional Amendment to introduce Article 371(2) of the Constitution. In Para 17 of its report, the Joint Committee, under the Chairmanship of Late Shri Govind Ballabh Pant, stated as follows:

"It was urged before the Committee by its members from Vidarbha that the agreement entered into in September 1953, known as the Nagpur Agreement, should, to the extent practicable, be given constitutional recognition. The members from the other Maharashtra areas gave their full support to this proposal. A new clause has accordingly been added to the proposed Article 371 with the consent of the members from Maharashtra"

The experiment of the State of Bombay was short lived. The Gujarati speaking areas demanded separate

statehood. As their demand was being considered, once again the legislators from Vidarbha demanded separation from the erstwhile State of Bombay. While debating the Bombay Reorganization Bill, 1960, the then Chief Minister of Maharashtra, Late Shri Yashwantrao Chavan laid a Statement of Government's Policy assuring the people of Vidarbha that the provisions of Article 371(2) would be implemented and Vidarbha will be given more than its equitable share if it continued to remain in Maharashtra. It was on the basis of this assurance that Vidarbha continued to remain in Maharashtra when Gujarat separated.

Despite these assurances, when the people of Vidarbha found that their development and growth was neglected, they once again demanded separate statehood. Therefore, in 1983 the then Chief Minister of Maharashtra Late Shri Vasantdada Patil appointed a committee, including two eminent economists viz., Prof. V. M. Dandekar and Prof. Neelkanth Rath. This committee was captioned as the "FACT FINDING COMMITTEE ON REGIONAL IMBALANCES". The committee considered region wise backlog in the 9 developmental sectors and submitted its report. The committee found an overall backlog of Rs. 3186 crore in 9 important sectors and recommended that 85% of the State's developmental funds be utilized for removal of backlog. The Government of Maharashtra did not accept the Report but made certain allocations for removal of backlog.

As these allocations were insufficient and also were not properly utilized, the demand for separate statehood for Vidarbha once again surfaced. In order to overcome this demand, the government decided that it would be prudent to constitute Regional Development Boards as provided for in Article 371 (2) of the Constitution. A resolution for that purpose was moved on the 26th of July 1984 which was duly passed in both the houses of the Legislature.

However, there was no implementation of this resolution for almost ten years. After persistent follow up from the leaders of Vidarbha and Marathwada, the President of India by an order styled the "State of Maharashtra (Special Responsibility of the Governor for Vidarbha, Marathwada and the Rest of Maharashtra) Order", entrusted special responsibility on the Governor to establish Development Boards for the regions of Vidarbha, Marathwada and the Rest of Maharashtra under Article 371(2) of the Constitution. Pursuant to the aforesaid order, the Governor of Maharashtra by an order dated 30 April 1994, constituted the three Development Boards and prescribed their functions.

In order to decide the exact extent of backwardness and the latest position on backlog, since the Dandekar Committee report was over ten years old by then, the Governor appointed a Committee called the "Indicators and Backlog Committee". The said committee submitted its report in 1997. Since various objections to this report were raised by certain departments in government, the Governor reconstituted the committee and asked it to submit a further report after carefully considering these objections. The final report of this reconstituted Indicator Committee was submitted on the 27th of September 2000. The report was duly accepted by the Governor and the State of Maharashtra. The Government also expressly stated that while trying to remove the existing backlog as in 1994, care should be taken that no new backlog should be developed.

The earlier Indicators and Backlog Committee had estimated a backlog of Rs. 15,356 crore as on 1st April, 1994. The reconstituted Indicators and Backlog Committee after considering the views of the concerned departments reassessed the physical backlog and calculated the quantum of financial backlog at Rs. 14,007 crore as on 1st April, 1994. The region-wise break-up of the financial backlog, as was indicated by the committee, is given in Table 1.1.

Table 1.1: Region wise Break-up of Financial Backlog

(Rs. in crore)

Sr. No.	Region	Financial Backlog	Percentage
1	2	3	4
1	Vidarbha	6624	47.60
2	Marathwada	4005	28.77
3	Rest of Maharashtra	3378	23.63
	Total	14007	100.00

The allocation for backlog removal on the basis of the Indicators and Backlog Committee was first made in the Annual Plan 2001-02. The Governor also directed that the remaining backlog as on 1st April 2001, by taking into consideration the expenditure already incurred from 1994-95 to 1999-2000 and the allocation made for backlog removal for the year 2000-01, should be liquidated in a period of 5 years starting from 2001-02. However the backlog could not be liquidated in a period of 5 years and as such the Hon'ble Governor in the directives for the Annual Plan 2009-10 mentioned as below :

"After liquidation of the current financial backlog as estimated in 1994, there may be an option of assessing the backlog created after 1st April, 1994 till date by using the same indicators suggested by the Indicators and Backlog Committee. The drawback of this arrangement is that the issue of backlog removal remains open-ended and dynamic. The reason being after liquidation of existing financial backlog the state average is bound to increase and some districts are bound to remain below the state average. Thus, the process of removal of backlog based on the concept of state average becomes a never ending process not necessarily need based.

The Indicators and Backlog Committee had taken into account only the public investments ignoring the private from its analysis. But, under the new emerging scenario, the role of the private sector in sectors such as infrastructure (roads and irrigation) cannot be ignored. Now it is imperative to revisit the issue of assessment of backlog in the light of new developments in the socio economic fields.

The present methodology focussing on backlog estimation which stipulates that all the regions are to be brought to the same level of development does not take into account the needs and development opportunities of the regions in order to achieve balanced regional development. In the present system, for instance while some weightage has been given for the ongoing projects for allocation to irrigation sector, there is hardly any scope for harnessing the untapped irrigation potential of a particular region.

There has not been any impact assessment study of the efforts to liquidate the irrigation backlog in terms of better returns to the farmers, improved quality of life and inclusive growth. It is imperative to ensure that the efforts taken under the provisions of Article 371(2), take the development initiatives to the logical conclusion".

Similarly, the Hon'ble Governor in the directives for the Annual Plan 2010-11 issued on 19th March, 2010 mentioned as below :

"Considering the fact that the financial backlog of 1994 is expected to be liquidated by the year 2010 i.e. almost after 16 years, it would be difficult to envisage a fixed time frame for liquidation of remaining backlog as on 1994. The cost and time overruns involved in the process might complicate the matter

further. Therefore, even after liquidating the financial backlog, the creation of commensurate irrigation facilities, as envisaged in the Indicators and Backlog Committee report of 1994 may be difficult to achieve without putting significant strain on financial planning of the state. Over the years, a large share of the state funds has been allocated to irrigation perhaps by ignoring the legitimate claims of other social sectors thereby distorting the state planning. Too much emphasis on one sector at the cost of other sectors is not desirable.

As pointed out in the directives of 27th May, 2009, after liquidation of the backlog as estimated in 1994, there may be an option of assessing the backlog created after 1st April, 1994 till date by using the same indicators suggested by the Indicators and Backlog Committee. The drawback of this arrangement was that the issue of backlog removal remained open-ended and dynamic. The reason being after liquidation of existing financial backlog, the state average was bound to increase and some districts were bound to remain below the state average. Thus, the process of removal of backlog based on the concept of state average would become a never ending process, not necessarily need based.

The Indicators and Backlog Committee had taken into account only the public investments ignoring the private sector from its analysis. But, under the emerging new economic scenario, the role of the private sector in infrastructure (roads, irrigation and power) as well as social sectors (health and education) cannot be ignored. Currently, the State Government has adopted a policy taking up some of the infrastructure projects like construction of roads, bridges, irrigation and energy projects through Public Private Partnership (PPP) mode. In social sector also large number of schools, technical, engineering and medical colleges is being established by the private sector. Most of these activities in private sector are motivated by profit maximisation. Such profits are possible only in already developed regions. The development through this process had an inherent danger of widening the gap between the developed and backward districts in the state.

The approach of the Indicators and Backlog Committee was supply driven and focussed on providing infrastructure in backward areas. This approach does not focus on outcomes of the investments in terms of well-defined indicators like increase in productivity, income health and education status and overall well-being of an individual. Internationally, many new approaches are being used for assessing the development of a region like Human Development Index (HDI) and other gender related indices which are a combination of factors like income, health, education, gender empowerment and equity.

In the light of these observations, it became imperative to revisit the issue of backlog and issue of equitable distribution of developmental expenditure with fresh insight and explore alternate ways of ensuring equitable allocation of resources. The Hon'ble Governor, therefore, decided to constitute a committee of experts to look into these issues keeping in view the present status of various sectors in all the three regions and review the issue of balanced regional development taking into consideration the views of all the stakeholders."

1.1 Composition of High Level Committee

Pursuant to the directives of the Hon'ble Governor, the State Government vide GR No. Anushesh-2009/C.R.405/D.1416, dated 31st May, 2011 constituted a Balanced Regional Development High Level Committee under the Chairmanship of Dr. Vijay Kelkar with composition as given below :

1.	Dr. Vijay Kelkar	Chairman
2.	Dr. Abhay Pethe	Member
3.	Dr. Mukund Ghare	Member
4.	Shri. Vijay Borade	Member
5.	Dr. Abhay Bang	Member
6.	Smt. Kumud Bansal	Member
7.	Dr. Madhav Chitale	Member
8.	Dr. Vinayak Deshpande	Member
9.	Dr. Smt. Sangita Kamdar	Member
10.	Dr. Dilip Nachane	Member
11.	Dr. R. P. Kurulkar	Member
12.	Dr. V. M. Mayande	Member
13.	Director General, YASHADA	Member
14.	Principal Secretary Planning Department	Member-Secretary

1.2 Terms and References of the Committee

The Terms of References of the High Level Committee are as follows :

- (1) To decide indicators for estimating imbalance in regional development.
- (2) With reference to 1 above, determine the imbalance in development in the context of the State's development average on the basis of latest available data at the end of year 2010. While doing so, direct investment/expenditure of the State Government and investment in the private industrial sector with the help of the State and Central Government is taken into consideration.
- (3) To decide the indicators which can be implemented on priority from the indicators ascertained.
- (4) To suggest measures for removal of imbalance so ascertained and principles of allocation of developmental fund and also suggest measures so that backlog will not be created in the future and suggest the role of the Development Boards in this regard.
- (5) The committee itself will decide the methodology of its working.

1.3 Details of the Visits

The Balanced Regional Development High Level Committee was asked to submit its report within a year i.e. by May, 2012 to the Hon'ble Governor. Accordingly, the committee in its first meeting held on

22nd June, 2011, scheduled the visits to all the Revenue Divisions which were to be completed by February, 2012. However, in view of various unavoidable reasons, the committee could not complete the visits to Revenue Divisions as scheduled and therefore requested the State Government to extend the time period for the committee till March, 2013. The State Government vide GR No. Samiti-2012/C.R.5/D-1416, dated 20th July 2012 extended the time period for the committee till March, 2013. The committee decided to make its recommendations on the basis of figures published in the 2011 Census. However, due to non-availability of detailed data, the committee could not finalise its recommendations within the stipulated time period and therefore once again requested the State Government to extend its time period till June, 2013. The State Government vide GR No. Samiti-2012/C.R.5/D-1416 dated 30th April 2013 extended the time period for the committee till June, 2013. Entire work of preparing draft report by various sub-groups was completed by the end of June, 2013. However since the report was very voluminous and contained huge amount of data it was thought prudent to seek suitable extension from the Government so as to make sure that there are no inconsistencies in different chapters. Best efforts have been made to rule out any possibility of inconsistency in data or various recommendations which are now being made in this final report.

The Chairman and the Member Secretary of the committee had extensive discussion with the Hon'ble Governor. They also had extensive discussion with the Hon'ble Chief Minister, Hon'ble Deputy Chief Minister and Hon'ble Minister of State for Planning, Government of Maharashtra.

The committee visited all the Revenue Divisions of the State. The details of the visits are provided in Table 1.2.

Table 1.2 : Details of the Visits

Revenue Division	Date of Visit	Places Visited
1	2	3
Nagpur	17.09.2011	SEARCH and Gadchiroli District Headquarter
	18.09.2011	Nagpur Divisional Headquarter
Aurangabad	09.11.2011	Jalna District Headquarter
	10.11.2011	Aurangabad Divisional Headquarter
Amravati	06.04.2012	Yavatmal District Headquarter
	07.04.2012	Amravati Divisional Headquarter
	08.04.2012	Panjabrao Deshmukh Agriculture University, Akola
Nashik	22.04.2012	Nasik Divisional Headquarter
	23.04.2012	Nandurbar District Headquarter
Konkan	13.10.2012	Sindhudurg District Headquarter
	14.10.2012	Konkan Divisional Headquarter
Pune	03.11.2012	Satara District Headquarter and Waduj
	04.11.2012	Pune Divisional Headquarter

During the Revenue Division visits, Hon'ble Guardian Ministers of almost all the districts from the Division participated in the meetings and proceedings. Similarly most of the Members of Parliament, Members of both the Houses of Legislature, Mayors of Municipal Corporations, Presidents of Zilla Parishads, Chairmen of Panchayat Samities, Presidents of Municipal Councils, prominent NGOs and

common people attended the meetings and submitted their representations. The committee had extensive discussions with members of Vidarbha, Marathwada and Rest of Maharashtra Development Boards respectively at Nagpur, Aurangabad and Konkan Divisional Headquarters. The committee also discussed with the District Collectors, CEOs of Zilla Parishads and District Officials taking into account the needs and development opportunities of the regions in order to achieve balanced regional development. A list of Stakeholders whom the committee members met during the field visits, as well as those who made representations before the committee is given in Annex 1.2.

1.4 Meetings of the Committee

The committee had several meetings during the period from June, 2011 to October, 2013 on the dates as shown in Annex 1.3.

1.5 Intra Committee Sub-Groups

The committee in its first meeting held on 22nd June, 2011 decided its methodology of working and appointed 5 Intra-Committee Sub-Groups and commissioned 11 studies through experts. Details of Intra-Committee Sub-Groups and studies commissioned are as follows:

Sub Groups of the Committee :

1. Water Resources
2. Agriculture
3. Industry and Infrastructure Development
4. Education
5. Governance
6. Health
7. Tribal Areas

Tribal Development Commissioned Studies :

- | | |
|---|-------------------------|
| 1. Regional Growth Strategies for Vidarbha Region | Prof. Vinayak Deshpande |
| 2. Regional Growth Strategies for Marathwada Region | Dr. R. P. Kurulkar |
| 3. Regional Growth Strategies for Rest of Maharashtra | Prof. Pradeep Apte |
| 4. A Perspective on Political Dynamics on Maharashtra | Prof. Suhas Palshikar |
| 5. Status and Prospects of Investment and Employment in Maharashtra : A Disaggregated Look | Dr. Chandras Deshpande |
| 6. New Agricultural Process : Status and Prospects | Dr. V. M. Mayande |
| 7. Lessons to be Learnt from Earlier Policy Attempts and Literature | Prof. Mala Lalwani |
| 8. Strategy Development of Social Sectors as a means of Human Centric Regional Development in Maharashtra | Dr. Sangita Kamdar |
| 9. Social Backwardness of Marathwada Region | Prof. Swati Shirwadkar |
| 10. Health | Dr. Prakash Doke |

The committee mobilized Nagpur University, Marathwada University, YASHADA, Panjabrao Deshmukh Agriculture University, Mumbai University, Pune University, Gokhale Institute of Politics and Economics, Maharashtra, WALMI, Aurangabad, Water Resources Development Centre and Narsee Monjee Institute of Management Studies to assist through various studies.

The committee tried to lay its hand on the most updated data and requested the concerned departments to provide the same. But due to various constraints faced by some of the departments latest data could not be made available despite best efforts. Almost the entire working of the committee is based on the 2011 Census data which is published and made available.

1.6 Committee Report and its Terms of Reference

The Committee's report has looked into each point under the scope of work defined in **the GR for constitution of the Committee** (शासननिर्णय क्र. अनुशेष-२००९/प्र.क्र.४०५/का-१४१६, दि.३१मे, २०११) . We believe that our committee has adopted a paradigm change and has taken nuanced approach to the issues delineated in the ToR. However, as the report is voluminous and as the various points in the scope of work have been dealt with across different chapters of the report, here we briefly flag in a summary fashion, the compliance of committee's report with the scope of work as expected in the ToR.

- (1) To decide indicators for estimating imbalance in regional development.

'Chapter 4: Towards a Balanced Regional Development : A Multidimensional Policy Approach' identifies and provides an overview of 'Indicators for restoring and sustaining regional balance'. The indicators are located in the sectors of Water, Health, Education, Connectivity, Power and Agriculture Credit. The reasons for identifying these sectors have been further discussed and elaborated in the respective chapters. A multidimensional, two-pronged approach consisting of 'Equalization of Basic Services' and 'Growth Acceleration Strategies' underlies the specification of the indicators that were quantified to assess the imbalance in development.

- (2) With reference to 1 above, determine the imbalance in development in the context of the State's development average on the basis of latest available data at the end of year 2010. While doing so, direct investment/expenditure of the State Government and investment in the private industrial sector with the help of the State and Central Government be taken into consideration.

The overall scenario of three regions against the average development levels in the State has been discussed in *'Chapter 3: Regional Development : Trends and Patterns in the Recent Past'*. The committee has consciously taken a sector specific approach for estimation of regional imbalance. It has further taken a conscious decision to compare the development status on the basis of sector-wise norms that are more stringent than state averages for reasons discussed in Chapter 4. The chapters such as Health, Education, Connectivity, amongst others, have further dwelt upon imbalance in the respective sectors. The cumulative outcomes have been determined differently for each sector where a few quantifiable indicators have been pragmatically identified (where reliable and

consistent latest data are available). Here we have used the 'Occam's Razor' principle that leads to parsimony.

The direct investment of state has been discussed in '*Chapter 4*' and '*Chapter 6: Governance*'. The resource demands to render our recommendations and proposals viable have been checked against the conservative estimates of the resource availability so as to satisfy ourselves that what we suggest is attainable. Whilst recognizing the public investments crowd in private investments, given the changed economic environment we have paid special attention to the role of policy reforms and governance structures and institutions so as to improve the ease of doing business and attract private investment. We have also focused on the role of Central Government. Further, we have also extended the concept of regions to include 'Virtual' or imagined regions to take care of Water Stressed and Tribal Areas. We have taken care to identify region specific avenues and strategies to leverage the dynamic comparative advantage of the region.

- (3) To decide the indicators which can be implemented on priority from the indicators ascertained.

In chapter 4 certain priority areas have been enlisted in the section '*Early Actions - Immediate Steps*'. These prioritized areas include *Maji Malgulari Talav*, *Bhustar Pratikal Talukas*, *Kharpanpatta* special provisions for water (water stressed areas), settling disputes concerning riparian rights related to Jayakwadi water, acceptance, decision and announcement of Regional Governance structure, ring fencing of green bonus, royalty for minerals, restoration of Chandrapur (recompense for degradation), solar energy initiative for Marathwada, NPV costs related to forests (irrigation projects) within non-divisible pool etc.

Similarly, in all the sector wise chapters the phasing of interventions and priorities have been suggested.

- (4) To suggest measures for removal of imbalance so ascertained and principles of allocation of developmental fund and also suggest measures so that backlog will not be created in the future and suggest the role of the Development Boards in this regard.

Two broad approaches of '*Equalization of Basic Services*' and '*Growth Acceleration Strategies*' through equitable investments to leverage dynamic comparative advantage form the basis of our understanding of regional balance. The '*Summary of Recommendations*' provide various measures to be taken. We have also provided the *Allocation Formulae* in detail and recommend that the same should be used in the future Directives by the Hon'ble Governor under the mandate derived from 371(2). The carefully and realistically estimated *Resource Availability and the Resource Requirement* has also been suggested over the next two and a half five year plans (including the remaining period of the current five year plan).

The chapter on '*Governance*' contains a detailed discussion of the regional governance mechanism. It has recommended a major restructuring of Regional Development Boards giving them much more power of decision making and control over regional resources. Measures have also been suggested to

ensure optimal divisible pool thus enabling resource flow to regions who will then appropriately use it. All of this we believe will help reestablish a bond between regions of Maharashtra, allow each region to exploit its potential fully and avoid the recurrence of imbalance in the future.

Recommendations of the Committee are endorsed by all the members except one. Dr. Sangeeta Kamdar, one of the members of the Committee has expressed reservations about some of the recommendations in Chapters 4, 6 and 12. Her observations are placed at the end of the report marked as Annex 'Z'.

The committee hopes that this report will meet the expectations of the Government as well as of the people of Maharashtra.



CHAPTER 2

Stakeholders' Perspectives

2.0 Introduction

Understanding the perceptions of the stakeholders about the regional imbalance was important for the committee. During our interactions with the stakeholders, diverse views were expressed about the nature, causes and consequences of regional imbalance in each of the regions. The committee immensely benefitted from these meetings with stakeholders. Various stakeholders included elected public representatives (like the Members of Parliament, Legislative Assembly, Legislative Council, Zilla Parishad, Municipal Corporations, and other local bodies, Ministers, Political Parties, Expert Members of the Regional Development Boards), voluntary Non Government Organizations working in the area, officers from various departments of Government of Maharashtra, experts from various disciplines and general public.

These meetings were held in the Divisional Headquarters of Maharashtra and were excellently supported by Divisional Commissioners and Collectors. In the following section, the views expressed by stakeholders from all the three regions are presented.

2.1 Vidarbha Region

The stakeholders expressed their deep concerns about regional imbalance. These representations contain not just grievances, but also analysis based policy suggestions. These are summarized in the following paragraphs.

Most of the stakeholders from both Nagpur and Amravati Division of Vidharba have expressed their anger and the disappointment about the policies pursued so far. Many have voiced their critical views regarding progress pertaining to implementation of landmark pacts i.e. Akola Pact, Nagpur Pact and reports by Dandekar Committee and Indicators & Backlog Committee. It was reiterated that these pacts and committee recommendations are important events in the history of Vidarbha. They play a key role in shaping up the mindset of the people of Vidarbha and their representatives as well.

The representatives emphasized the importance of the spirit behind the Akola Pact and the Nagpur Pact and how it was not fully adhered to in the subsequent policies and practices. This they considered to be a *betrayal of their trust*. The committee recognizes this sense of betrayal to be the essence of this region's angst. We might note two things upfront. One, **almost all the stakeholders displayed unanimity in expressing their view that 'district' ought to be considered as the unit of analysis by the present committee**. Two, especially when the committee visited Gadchiroli, specific issues were raised regarding the Tribal population in the region. The committee recognized these as pertinent and

important and appointed a **special study group to look at the issues related to Tribal communities which are reported along with the recommendations in a separate chapter.**

During our visit to Nagpur, a delegation of 28 members of Legislative Assembly and Legislative Council representing all political parties met us and gave a collective representation on various aspects of regional imbalance and urgency for removal of the imbalance. Towards this, they have suggested several measures for removal of backlog of the region in different sectors and processes like agriculture, irrigation, industry, mining, roads, forests, co-operatives, social sectors, urbanization etc.

In the following section, we summarize the stakeholders' views.

2.1.1 Irrigation

In the region of Vidarbha, inadequate irrigation facilities is becoming a hurdle for the overall development of the region. Stakeholders felt that prosperity of any region depends on irrigation. However, projects in this region await environmental and forest department clearances. Lack of irrigation has also deprived the farmers of this region in availing the consequential benefits like subsidies on fertilizers, pump sets, etc.

2.1.1.1 Distribution of Funds for Irrigation Sector

1. Removal of irrigation backlog should be considered as a top priority while allocating the funds. The funds earmarked for irrigation should be allocated exclusively to remove the backlog of irrigation as updated every year.
2. Removal of the pending backlog must be ensured, till then, no new funds for irrigation should be allocated to the districts where the irrigation facilities are more than the state average.
3. While allocating the funds, it is necessary that an adequate weightage be given to the quantum of unutilized water available in the district.
4. While making allocation of funds, weightage should also be given to the updated physical backlog as determined by the latest report of Maharashtra Water Resources Regulatory Authority.
5. The entire net sown area under each Development Board should not be considered for the allocation of funds. Only the un-irrigated net sown area or dry land cultivated area should be the basis for allocation of funds. Such a measure would eventually lead to need based allocation of funds.
6. In the process of water management, the types of crops, agro based industries and population dependent on it should be given due consideration.
7. The districts (a) with low Human Development Index, (b) with Per Capita Income less than the state average, (c) which are affected by Naxalite movement and (d) which are ridden with problems of farmers' suicide should be given priority in New Irrigation Projects. Similarly, ongoing projects in such areas should be given more funds for their early completion.
8. During summers, the water level of minor irrigation tanks goes down thereby

raising fluoride percentage in water. Exceedingly high fluoride content deteriorates quality of water as also the quality of soil. In order to overcome this problem, irrespective of the ownership of the land, Government should immediately initiate measures for soil conservation of the affected land. Soil conservation would result in increased water level of these tanks thereby restraining the percentage of fluoride.

While making provisions for new projects and also for completion of the ongoing projects, the above mentioned facts should be given due consideration.

Backlog of irrigation sector in Vidarbha should be computed on the basis of 'ground realities'. The existing traditional sources of water, although shown on paper, do not exist in practice. In this regard, the views expressed by stakeholders about '*Maji Malgujari*' tanks are worth noting.

2.1.1.2 *Maji Malgujari (MM) Tanks:* *Maji Malgujari* (MM) tanks are a supplementary system of irrigation and should be viewed as such. The provision made in the backlog of 1994 considers *Malgujari* tanks as a primary source of irrigation. *Malgujari* tanks should be excluded while computing the current backlog. Study Group formed by Government of Maharashtra, under the chairmanship of Advocate Kimmatkar has shown that in Eastern Vidarbha, as of date, there are 6862 MM tanks.

One of the stakeholders was of the opinion that most of the MM Tanks as reported are merely notional and exist only on the paper. However, because of their inclusion as genuine water storage the irrigation backlog in Bhandara and Gondia district has been shown as Zero. Since 1952 these tanks exist 'merely on paper' and they have very little genuine utility.

Out of 6862 tanks, hardly 20%, are functional. Non functional tanks are idle assets that can easily be made functional and utilized to supplement the irrigation system.

2.1.1.3 *River Linking Projects:* It is felt that there is an ulterior motive to siphon out water from Eastern and Western Vidarbha through the river linking projects. It is suggested that the share of water fixed by the Godavari Tribunal must be utilized in Vidarbha. The projects beyond the territories shall be sanctioned only when the irrigation requirements of Vidarbha region are fulfilled through the following projects:

1. Wainganga (Ghosikhurda) Nalaganga (PurnaTapi) River Linking Project
2. Pranhita Chevella Sujala Shravanti Project (Maharashtra-Andhra Pradesh border)
3. Manjara Project
4. The Lower Penganga Project (41.12 TMC capacity with share of Maharashtra being 88 % i.e 35.4 TMC). Total irrigation capacity is 2,27,271 hectares. This

project should be undertaken for the overall social and economic development of the region and would also help in reducing incidents of farmers' suicides.

In Vidarbha, most of the rivers overflow from July to September. However, the water level drops to an all-time low after November. In the months of March to May, there is an acute shortage of water. The Government should take cognizance of this grim fact and should not divert water from the rivers of Vidarbha unless the projects in Vidarbha are accomplished in a true sense.

2.1.1.4 Development of Irrigation in Vidharbha

Per capita and per hectare availability of water is far too less in this division hence stakeholders from this region have made following suggestions.

Water from sub-basin of Vainganga be diverted to sub-basin of Godavari

This region is characterized by deep black soil and *khar-pan-patta* (salinity), therefore, technical and economic project criteria for this region should be changed.

2.1.1.5 Re-establishment of CADA: 'Command Area Development Authority (CADA)' had played a major role in development of irrigation facilities in Maharashtra. CADA should be re-established and should be bestowed with more powers till all the potentially irrigable land is materially irrigated.

2.1.2 Forests of Vidarbha

An emphatic suggestion was made by the representatives of many organizations and MLAs, in particular, that Nagpur be called as 'Waghpur - City of Tigers', as it is surrounded by forests inhabited by the wild cats. Here, under are the other suggestions of the representatives as regards the forests of Vidarbha:

1. Vidarbha contributes Rs. 173 crores (90%) out of the total forest revenue of 192 crores of the State of Maharashtra. It is suggested that the expenditure commensurate with the revenue should be incurred towards the development of forests of Vidarbha.
2. Appropriate bamboo policy should be framed to facilitate employment from the bamboo clusters.
3. If wild life and eco-tourism are properly planned, a large number of employment opportunities can be generated for the unemployed youth. A zoo of international standard can be established at Gorewada near Nagpur. It can operate as eco-tourism cluster nucleus.
4. Special Development Fund (eco-conservation fund) should be created to support the districts like Gadchiroli, Gondia, Chandrapur, Bhandara and Amravati to protect their forest wealth.
5. A special development model should be framed for the 37 Naxal affected talukas of Vidarbha. It may address issue like attitudinal change of the youth, changing

mindsets of the people, providing opportunities of employment. The focus should be on bringing back the misguided youth into the main stream.

6. The forest policy of 1980 is proving to be a major road block in the progress of irrigation projects of Vidarbha. The forest occupies 48% to 50% of the total land under these projects. However, the density of these forests is just a little over one percent. It is suggested that, “a separate forest strategy should be implemented for the completion of irrigation projects in the forest area”.

2.1.3 Problem of *Zudpi Jungle*

When the region was merged with Maharashtra in 1960, the grazing grounds (*Gairan*) were classified as '*Zudpi Jungle*' and, thus referred as 'forest' in Maharashtra. Though this land comes under the Revenue Department, the usage of word 'forest' makes it essential to obtain forest clearance for any project requiring this land. As a result, the issue became a contentious one for over 50 years for Vidarbha region. Land classified as '*Zudpi Jungle*' actually has very little forest now. Keeping in view the economic purpose, stakeholders were of the opinion that denotification process of *Zudpi Jungles* should be completed on top priority. It is reported that in Nagpur Division alone, 1,78,525 hectares of land is classified as '*Zudpi Jungle*'. Several economic activities like mining, industrial and irrigation projects are pending due to *Zudpi Jungle*.

2.1.4 Roads

One of the stakeholders has stated that, the backlog computations reveal that there is no backlog for Vidarbha so far, as State Highways and Major District Roads are concerned. However, there exists a huge backlog as on 31st March, 2010 with respect to Other District Roads and Village Roads of Vidarbha region. The total backlog works out to Rs. 6655 crores. The network of National State Highways and District Roads is being established through BOT, Public Private Partnership and organizations like M.I.D.C. No such system or arrangement exists for district and Village Roads. It further makes a plea “...It is desirable to have a fresh look at this important parameter of development, by reassessing backlog, and necessary funds be infused to improve the road connectivity of Vidarbha”.

2.1.5 Industrial Development of Vidarbha

1. One of the MLAs from this region has pointed out that the region of Vidarbha possesses large amount of mineral resources which remained unexploited thereby affecting the value addition by industries.

He further argued that power constitutes 60% of the raw material cost of mineral processing units. Hence, power should be made available at a lower price to minerals processing units as is the policy adopted in the State of Chhattisgarh.

- a. Special concessions can be offered to attract value added industries such as automobiles, biotechnology, pharmaceuticals and IT etc.

- b. A Development Commissioner (of the status of Additional Chief Secretary) should be appointed for Vidarbha.
 - c. Large scale agro based industries should be initiated keeping in view the major contribution of the agricultural produce to the GDP of Amravati division.
 - d. Textile industries should be attracted to Vidarbha, as 80% of the cotton of the co-operative sector is produced in Vidarbha. A textile policy must be framed with immediate effect.
 - e. MIHAN should be given the status of a “Special Project” by the Central and State Governments.
 - f. The power projects producing more power than necessary should be closed with immediate effect with a view to conserve water and environment. The water needed by these projects can irrigate seven lakh hectares of land, which is a huge burden for Vidarbha. In lieu of this sacrifice, the region receives futile ash and huge damage to the environment. In addition, huge chunks of cultivable land become non irrigable.
2. The submissions were made by immediate past president of Vidarbha Economic Development Council. These pertain to opportunities for industries in Vidarbha. Based on the distinct advantages of the region, we should pick up those thrust areas for industrialization, including service industries, which have excellent scope. The four central pillars which should support industrialization in Vidarbha are: (1) Power Sector (2) Logistics (3) Tourism and (4) MIHAN. These should be further supplemented with (1) Timber and Forest Based Industries (2) Agro-Processing (3) Textiles (4) Other manufacturing Industries- Cement , Foundries, Steel & Re-rolling, Auto Spares, Farm Equipments (5) IT & ITES and (6) Mines and Minerals.
- It is a paradox that a large number of applications is pending and only a few industries are operational in MIDC industrial areas like 'Butibori'. We have, for years, been pressing that MIDC should call-back the huge acreage of land which has not been put to industrial use and allocate that to pending applicants This process needs to be made more Industry friendly and very difficult for land grabbers and speculators. With this single step, we can transform these desolate estates into vibrant industrial estates in reality.
3. There exists a vast scope for setting up of an Ultra Mega Power Plant (UMPP-4000 MW), Cement Plants and Power Equipment Manufacturing Plants in Chandrapur district. In this connection the following facts merit consideration:
- a. There is vast barren land (both Government & Private) near Pippalkuti railway station, which can be acquired at an economical rate.
 - b. This railway station is very near to Bhivakund coal mine. This advantage could be tapped. The station is on the main line (Howrah Mumbai route), thus connected to major ports for acquiring imported coal.

- c. Proposed Pen-Ganga dam is about 25 km from the site and hence adequate water availability is ensured.
- d. NH - 7 is adjacent to the site.
- e. Limestone mines are available near this site.

2.1.6 Power Sector

With 26 plus power plants coming up in the region, Vidarbha is set to become the Power-House of Maharashtra. However, this boom must translate into tangible gains for the region.

1. The following policy changes were mooted
 - a. Levy a Vidarbha Development Cess on all the power that is transmitted to regions outside Vidarbha, whether in Maharashtra or in other states, and use that money exclusively to fund the region's development.
 - b. Make it mandatory to use fly ash for roads, filling of mines, construction of minor, small and medium irrigation dams, housing for High Income Group (HIG), Middle Income Group (MIG) & Low Income Group (LIG) etc. within 100 kms of the power plant.
 - c. Power should be supplied first and fully to the region, before it is transmitted to the rest of the State.
 - d. Remove the polluting impact of transportation of coal to the power plants by providing excellent roads. Make rainwater harvesting, percolation tanks, watershed development and such other steps required to augment water resources compulsory for all power plants.
2. Set up an action plan to establish clusters for manufacturing of equipments, spares etc. for the generation, transmission and distribution of power.
3. It is envisaged that the proposed 26 power plants shall produce 87,000 MT of fly-ash. The use of fly ash is a great opportunity for SMEs to convert it into a productive resource.
4. There is a growing dissatisfaction amongst the stakeholders of Chandrapur due to pollution, affecting the normal life of people of the region. Power plants should develop their own abatement technology for controlling pollution and plants can have their own source of water. This would probably help to establish balance between the generation of power and maintaining natural resources. It was also suggested that to overcome the problem of pollution small size power plants be established.

2.1.7 Logistics

With the introduction of GST, Nagpur and the area around will once again become the natural choice for logistics hub, provided, we have the necessary infrastructure in place to meet the needs of present and future supply chain management.

It is important to encourage this by

1. Systematically plan for use of land for 100 kms along the NH 6, NH 7 and NH 69 , from Nagpur in all directions.
2. Demarcate by zoning 1000 acres of land on all four sides of Nagpur to provide for integrated logistics parks,
3. Give the status of industry to logistics service provisions and encourage investment with a Package of Scheme of Incentives (PSI), similar to industries.
4. Complete four lane Express Way from Nagpur to Sambalpur and Nagpur to Surat & Mundhra port, on top priority. This is delayed only in this part of Maharashtra State.

2.1.8 Tourism

Tourism potentials of Vidarbha are quite unique and they need to be harnessed and marketed distinctly. MTDC has not been able to do any justice to it. Ironically, some of these assets are in areas prone to farmers' distress and suicides. These areas need non-agricultural employments. Tourism is one of the best sectors to offer such new employment potential. With declaration of Nagpur as the Gateway City to Tiger Country-Central India, the tourism sector is bound to grow in a big way provided big players set up their establishments, develop infrastructure and broadcast the potential of the tourism market in Vidarbha.

It has been further argued that harnessing of such potential needs that

1. Government of Maharashtra should immediately form an Independent Vidarbha Tourism Development Corporation (VTDC) with mandate to develop and market tourism in this region. VTDC should have top officials of Tourism and of Forest Department on their Board. VTDC should only be a facilitator and promoter. (but should not be involved in business and commercial operations, which should be left to the private sector).
2. Government to Implements the report submitted by Tata Consultancy Services (approved by Cabinet) for both Eco-Tourism and tourism development in Vidarbha.
3. Government of Maharashtra must encourage huge private investments in Tourism sector in Vidarbha by offering Package Scheme of Incentives like industries.

2.1.9 MIHAN

This is one of the largest infrastructure projects the Government of Maharashtra is pursuing today. It needs to be monitored by the Chief Minister's office on a regular basis. Stakeholders have pointed out that the necessary infrastructure in the vicinity of MIHAN is almost ready. Following aspects need to be considered on a priority basis.

1. Market MIHAN professionally to manufacturing sector, especially the SEZ. It is, perhaps, necessary to appoint a global agency to achieve this and attract global giants.
2. Create Free Trade and Warehousing Zones in MIHAN.
3. Speed up the process of finding a partner for developing the International Airport, Rail & Road terminals.

2.1.10 Agro based industries

1. Agro and food processing industries need to be vigorously promoted and the potential needs to be harnessed.
2. Vidarbha has great potential in addition to Soya and Cotton. To transform the present industrial status, the possibilities of Bio-fuel, Rice, Jowari [Shorgum], Orange, Red Chilies, Turmeric based industries can be explored.
3. Nagpur has a major presence of timber industry units. However, due to rules and regulations governing timber it faces non-availability of timber. As a consequence, this industry has not evolved and flourished to realize the available potential. In general, policy should promote forestry for industrial uses. Forestry and its industrial uses should be facilitated on all available lands, whether public or privately owned. Forest policy should incentivize and promote afforestation for renewable source of timber.

2.1.11 Industrial Development

The suggestions of past president of MIDC Association, Hingna, regarding industrial development of Vidarbha are summarized as under:

1. It is the distance from major ports which adds to the transportation cost making it difficult for the units in Vidarbha to be competitive in the export, in comparison to units in Pune, Mumbai, Nashik & Aurangabad. A concrete policy can be framed to offer subsidy inversely proportional to the proximity with the major markets.
2. Large industries with strong linkages like automobile, electronics etc. need to be encouraged by the Government of Maharashtra and proper incentive structure must be established by the Government to ensure the entry of private sector.
3. Existing incentive structure of the Government needs to be further modified for rejuvenation and development of industries in Vidarbha.
4. The power should be made available to the units in Vidarbha at a concessional rate (as transmission cost is not incurred) as compared to the units located in other regions of Maharashtra. This would compensate for the additional cost of transportation borne by the manufacturers of Vidarbha.
5. Centralized decision making is the road block in the development of industries in Vidarbha. Decision making process needs to be decentralized.

Short and long term measures for the development and growth of industries in Vidarbha region are also enlisted by him.

2.1.12 The Short Term Measures

1. The Government should amend with immediate effect the present Industrial Policy and provide the incentives on the basis of 'Distance from Mumbai'. The more the distance of the industrial area, more should be the incentives.
2. Immediate creation of an authority such as Development Commissioner of Industries,

Vidarbha, who should be given sanctioning powers in the issues of various departments of the Government, including MIDC, MPCB, Industry Department, MSSSIDC etc.

2.1.13 The Long Term Measures

1. The power distribution companies must be directed to price their product properly by providing power cheaper near the generation center & loading with cost of transmission on the distance basis, for providing it to faraway places. The cross subsidy from the local industries of Vidarbha to industries in other parts of Maharashtra should be stopped forthwith.
2. The pricing structure by MIDC is absolutely unjust. It should be changed & the region like Vidarbha should be delinked from Mumbai & Pune. This will automatically bring down official prices of land in the region in MIDC area and would be parallel to the market prices. The present role of MIDC does not justify its existence as a development authority.
3. The local industries using the minerals of the region are being charged the royalty which must be stopped and they should be charged only for taking the minerals out of the region.
4. Special packages should be designed for Agro based Industries utilizing local crop and local mineral based industries.
5. Finally, the duty collected by Government on the power generation should be given to industries of Vidarbha as a cash subsidy for generating employment in this region. The power generating stations and the distribution agencies should be directed to give compensation for pollution utilization of agriculture land and these compensations should be provided to the farmers who wish to start some cottage industry so that, farmers do not have to raise any capital.

2.1.14 Labour Reforms

Suggestions made by representative of MIDC Amravati relating to labour problems:

1. While framing the labour laws, the modified classification should be as suggested below:
 - a. Labour in large and medium industries.
 - b. Labour in micro, small and cottage industries.
 - c. Labour in unorganized sector.
2. Single window operation (all the offices relating to industry under one roof at district level)
3. Simplification and reduction in the number of labour laws.
4. Reduction in the categories of Minimum Wage Act. (These categories should be reduced to three from existing 76 categories).
5. Shop Act registration should not be applicable for units with SSI registration.
6. Labour laws should be renamed as 'Industry Related Labour laws'. Survival of the industry should be the prime concern of the law makers.

7. Social security should be provided even if there is only one worker in a unit.
8. Though it is essential to provide security to labour, it is equally important to provide complete freedom to the owners/management for removal of the worker, for the industry to survive in the era of stiff competition.
9. There should be transparency, flexibility and camaraderie in the framing and implementation of labour laws.
10. In framing the labour policy for overall development of the country, the priorities should be set as under:
 - a. Survival of industry, trade, agriculture and service sectors.
 - b. Social security to the labour.
 - c. Profit to the owners/management/shareholders.

2.1.15 Directorates at Nagpur

Deputy Mayor of Nagpur Municipal Corporation observes that through the Nagpur Pact of 28th Sept. 1953, the then Home Minister and Chief Minister had promised that even after the formation of Maharashtra State, the importance of Nagpur as an administrative center shall not be lowered. It was decided that although the secretariat of various departments are stationed at Mumbai, their directorates shall be at Nagpur. There were 16 offices to be shifted to Nagpur as listed below:

1. Directorate of Agriculture
2. Directorate of Education
3. Directorate of Higher Education
4. Directorate of Adult Education
5. Directorate of Sports
6. Directorate of Animal Husbandry
7. Commissionerate of Co-Operatives
8. Town Planning Department
9. Office of the Chief Conservator of Forests
10. Directorate of Ayurveda
11. Directorate of Ground Water Survey
12. Office of the Inspector General of Prisons
13. Office of the Inspector General of Registration
14. Office of the Settlement Commissioner and Director of Land records
15. Directorate of Public Health
16. Directorate of Social welfare

However, barring a few offices like that of the Chief Conservator of Forests, most of the other offices have not been shifted to Nagpur. Shifting of these offices to Nagpur would facilitate faster decision making and act as a development accelerator.

2.1.16 Governance

A few suggestions made by the stakeholders of the region with regards to governance are as under:

1. The backlog amount must be disbursed in the same year; otherwise the allocated amount becomes insufficient after a few years due to inflationary pressure.
2. Special emphasis needs to be given on agricultural development.
3. Vidarbha Development Board has no powers. They only carry out a study, prepare a report and forward their recommendations to the honorable Governor. The members of the Development Board have extensive experience of the rural development and their potential remains underutilized. Government may empower these Boards with additional powers and responsibility for rural development.
4. As per the local situation, there should be flexibility in Government scheme. For e.g. disbursement of funds under MNREGA becomes difficult due to non availability of banking and postal facilities. Therefore, schemes should be tailor made.
5. An independent machinery like District Development Authority should be established for implementing plans of the District. This authority should be provided with adequate powers for administrative and technical sanctions and for taking disciplinary actions.

2.1.17 Agriculture

1. The representatives of farmers' organizations have made the following suggestions:
 - a. The price fixation of agricultural products for import-export should be done only after consulting the representatives of the major farm producers' associations.
 - b. A legislation that would provide for pension to the farmers and farm workers should be enacted by the Central Government keeping in view the uncertainties in the life of the farmers.
 - c. 'Agricultural Welfare Board' as suggested by Late Dr. Punjabrao Deshmukh, ex-Minister of Agriculture, Government of India, should be established to provide the various facilities (free of cost) to the children of the farmers such as education related to agriculture, agricultural engineering and other applied fields.
 - d. The textile mills in Vidarbha region (western) at Hinganghat, Achalpur, Amravati should be restarted and better capacity utilization of these mills should be ensured.
2. With a view to reduce the farmers' suicides in Vidarbha and to help improve their standard of living, following aspects can be given due consideration:
 - a. Usage of low cost production methods such as water conservation at source, organic

farming, improved methods of cultivation as suggested by the local agricultural institute, integrated food and fungal management and drip irrigation.

- b. Provide irrigation protection wherever possible through farm ponds, rejuvenation of old wells, tube wells in salt water belt and appropriate drip irrigation arrangements. These water sources can help the farmers to reduce the cost of irrigation.
- c. In case of dry irrigation, the farmer is affected not only by the vagaries of the nature, but also by the fluctuations in the market prices of his produce. Due to this, the farmers incur considerable losses. A benevolent fund must be established to help out the farmers in their difficult times.
- d. Farm roads in the villages can be developed through schemes like MNREGA. Warehouses, cold storages and processing units can be established at the village levels by providing 100% subsidy. Appropriate funds should be made available at the village level to make arrangements for catching the wild animals (who destroy the crops) and leaving them safely in the forest area.
- e. The criteria for the insurance should be made simple and easily understandable by the farmers. The insurance companies should have offices at the district level and facilities should be made available at the Gram Panchayat level. This can help in lowering the risk of production losses of the farmers.
- f. The research of the agricultural institute should be more and more farmer oriented. For this purpose, the feedback from the farmers must be solicited. Additional funds must be made available to the institutes from the regional backlog.
- g. The farmers must be encouraged and trained to form associations/co-operative societies through which they can be provided the latest technical knowledge and knowhow of farming and the processing units of the farm produce.

Stakeholder from Arni Tehsil has requested that the lower Pen Ganga Project, pending for several years, should be completed as early as possible. This would provide the farmers in the region with a huge irrigation capacities resulting in considerable increase in the agricultural produce such as sugarcane, cotton, groundnuts and soyabean. As a result, the Mangrul Sugar Mill in the region can be effectively operated and a few agro processing units can be established in the region resolving the problem of unemployment. This would change the very face of the taluka.

2.1.18 Sickle Cell

The representative of the 'Sickle Cell' society emphasizes that 'Sickle Cell' is a fatal disease prevalent in some of the communities of society. It is argued that even if one member of the family is affected by 'Sickle Cell', the entire family is ruined economically and psychologically. The population of 'Sickle Cell' patients in Vidarbha is 1.3 lakhs (SS pattern) and that of 'Sickle Cell' carriers (AS pattern) is 26 lakhs. As on date, there is no medicine or therapeutic treatment available to eradicate this disease. This is a genetic disorder and is passed on from one generation to another. The only method of control is counseling of marriageable young men and

women. When two sickle cell carriers marry each other the chances of progeny to be a sickle cell patient are fairly high.

It is suggested that, a state wide program of 'Sickle Cell Awareness' be undertaken under the aegis of 'Sickle Cell' counseling center and this be a part of Vidarbha development program. There is an urgent need to set up 'Sickle Cell' research, diagnosis and rehabilitation centres all over Vidarbha.

2.1.19 Banking

A meeting of Lead District Managers of Bank of India was convened at zonal office on 15th November 2011.

It was pointed out that, the growth of banking system is inextricably linked to the growth of economic activities in the districts. They felt that unless agriculture is modeled as a commercial venture rather than a subsistence type of activity, the full potential of resources in the region cannot be harnessed. Growth ideas need to be evolved in the context of specific needs of people in the area. There was imperative need for improving irrigation infrastructure in the region, for which possibility of public private participation model could be explored.

The Lead District Managers outlined the scenario of their respective districts. The following important points emerged during the discussion:

1. There is skewed distribution of business of banks in Maharashtra with less than 20% from Vidarbha and more than 80% from rest of Maharashtra.
2. Agriculture Universities are required to play a more crucial role in guiding farmers.
3. People have cultivated the culture of not repaying the amount of bank loan as they are called 'beneficiaries' and not 'borrowers'.
4. Impact of industrial estates in Vidarbha is not significant in terms of contribution to growth, compared to area of land acquired and investments made in developing the real estates.
5. Backward and forward linkages are required for various activities in rural areas in terms of infrastructural and marketing support to foster economic growth.
6. As the large corporates are penetrating rural markets through innovative strategies, likewise the growth strategies have to be oriented keeping in mind needs and requirements of rural sector.
7. Spread of Information Technology can improve availability of information in rural areas prompting rural population to take benefits of schemes and programs designed for their economic benefit.
8. At government offices, there must be a single window system to provide support and information to rural population relating to their various administrative needs particularly in the context of information dissemination about schemes and programs directed for their economic upliftment.

9. There is an imperative need for proper coordination amongst various government agencies and functionaries working for development of rural areas and backward districts, for more effective implementation of schemes.
10. SHG model for rural finance has proved to be effective. The model needs to be implemented in a focused manner for increasing productive activities and rural development.

2.1.20 Connectivity

The progress of the districts, specially in the western part of Vidarbha are affected due to lack of proper connectivity.

1. **Road Connectivity:** The district like Yavatmal has State and National Highways of 2750 kms and rural roads of 4400 Kms. However, ten villages are not reachable in rainy season, as they have no roads at all, 431 villages are deprived of tar roads, and about 1735 kms of rural and state roads are awaiting repair works, the cost of which is estimated to be Rs. 282 crores.
2. **Rail Connectivity:** A broad gauge line is required to be laid through the district of Yavatmal. This will improve the transportation system and subsequently result in overall business development. At present, there is no rail connectivity in the district of Yavatmal. Due to lack of railway route, even Government officials are dissuaded and discouraged in performing their tasks.
3. **Air Connectivity:** The existing airstrip (Jawaharlal Darda Airstrip) can be made operative for national and international flights with a minor extension. The connectivity of Yavatmal with the major cities can go a long way in the development of trade, industry and commerce in the region.

2.1.21 Education & Training

The suggestions on education & training include:

1. Various programs of UNICEF should be implemented at the district level which would, in turn, not only facilitate the capacity building of the rural young women but also prevent migration from their hometown in search of livelihood or resorting to unethical means of living.
2. A separate fund, called as 'Youth Fund', should be created for the welfare of the educated unemployed youth. This fund should be adequately replenished time and again thereby ensuring balanced development of the region.
3. Higher and technical education in the region is less focused and no prominent institutes of higher education have emerged and developed. Establishment of institutes which would be 'Centres of Excellence' is the urgent need of this region.
4. Grants for the educational institutes are limited to salary grant and there is no focus towards development. The Institutes are unable to provide quality education due to lack of funds. Lack of quality in education is leading to migration of rural students.

5. Many positions of faculty and staff in schools and colleges are vacant, thus hampering teaching-learning process, which is the back bone of any education system.
6. Schemes, scholarships and freeships to the students from backward community are not implemented properly. Thousands of students do not receive scholarships and freeships even after the end of the academic sessions. Most of the students are forced to go to banks & money lenders for loans with higher rates of interest to meet their day to day expenses.
7. Power cuts of 8 to 12 hours a day has forced education to come to a standstill. Most of the practical works and laboratory works are not satisfactorily carried out which, in turn, lowers the standard and quality of education.
8. There is brain drain of talented students to the other regions as no industries and job opportunities are available in this region. Government aid is necessary to provide adequate infrastructure and other facilities, so as to attract students to schools and shape up the overall development of the child.

2.1.22 Farmers' Suicides

Amravati Division and part of Wardha District were in news due to suicide of farmers on large scale. The major reasons for farmers' suicides are indebtedness, crop failure in successive years leading to acute distress and low return, illness of family members, failures to matrimonial hurdles in marriages of daughters and a lack of alternative sources of income.

The issue reflected a serious malaise underlined agrarian sector in the State, particularly in the cotton growing areas viz; six districts of Vidarbha.

Cotton is the primary cash crop and therefore, the principal source of income. However, this has turned out to be the most non remunerative in the last decade. Extensive use of HYV seeds requires heavy doses of fertilizers, pesticides and complementary inputs. As a result, the cost of cultivation increases substantially. The minimum support price fixed is about 20 to 30 per cent lower than the cost of production.

In the context of agrarian crisis leading to farmers' suicides, several suggestions were made by the stakeholders for supporting the bereaved families and for preventing the recurrence of the incidence.

1. The Government should employ literate children and other members of the family of those farmers who have committed suicide. In a majority of cases, one of the reasons for the suicide remains addiction to alcohol. Hence, the best policy that should be adopted by the government is to prohibit sale and consumption of alcohol in the region of Yavatmal, thus declaring it as 'alcohol free district'.
2. Timely monitoring of BPL facilities must be ensured by the Government officials. Government officials should conduct adequate and regular surveys of various families time and again to understand their apathy and provide solutions, thereby reducing suicide rates in these regions.
3. 100% irrigation facilities and power facilities should be given free of cost to farmers to

prevent suicides and to ensure that these farmers repay their loans and do not succumb to loan pressures. Farmers possessing land of less than five acres should get a fixed amount of Rs. 2000/- per month per farmer households from the Government at least for the next three years. This is calculated on the basis of loss of income of Vidarbha farmers as compensation for (a) low productivity due to irrigation deficit (b) inordinate delay in giving electricity connection to pumps (c) long hours of load shading leading to loss of production (d) resultant loss of electricity subsidy (e) low MSP compared to cost of production (f) unsatisfactory marketing arrangement of agriculture produce, etc. Also the Government should try to waive the entire loan amount of those farmers whose rate of return is less than the cost of production involved. (Scheme of Anewari)

4. Bank officials should approve crop loans for farmers as early as possible. 'Shetkari Yojana' schemes should be extended to eligible farmers without harassment. These facilities should also include availability of quality seeds and fertilizers at discounted prices. In order to improve productivity, a farmer needs to be trained for using modern infrastructure as well as for using of machinery such as diesel engines, sprinklers, along with availability of wells, fencing and water reservoirs.
5. Many farmers, though educated, are unemployed due to lack of job opportunities. Lack of employment opportunities drives these youths towards suicide. There are no major projects coming up in Yavatmal and the youth does not possess requisite skills in sectors and processes like dairy farming, horticulture, sericulture, cattle farming, fisheries, small scale industries, honey bee cultivation, etc. Banks should provide loans to train these youths in these fields so as to empower them for employment. These loans should be provided at minimum rate of interest along with business loans from 5 to 10 lakhs. Operations of PKV at present are restricted to research and education only. The extension activities along with production and sales of the seeds if included would help to establish link between farmers and the university in real sense. Extant laws relating to Agricultural universities should be amended.

2.1.23 Demand for Separate State

A few stakeholders expressed the need for a separate state. They pointed out that the developmental activities remained sluggish in the region of Vidarbha over a period of time. Lack of employment opportunities, industrial and agricultural sectors' backwardness gave impetus to the demand of more equitable development of all regions of Maharashtra. The region supplies raw material in the form of electricity, minerals, rice and cotton to the rest of Maharashtra. In the area of manpower development and training, Vidarbha has substantially contributed. More than 50 engineering colleges and equal number of M.B.A. institutes churn out well over 10,000 engineers and 4000 MBAs every year. The potential strength of the region remains unexplored on account of inordinate delays in decision making or decisions not made in favour of Vidarbha.

It was pointed out that, there is no logic in 'one state-one language' formula. Examples were pointed out that there are now more than one Hindi speaking states like Uttar Pradesh, Madhya

Pradesh, Bihar, Chattisgarh, Jharkhand and others. Thus, there is nothing wrong in having two Marathi speaking states (Maharashtra and Vidarbha). During the course of discussion, stakeholders also brought to the notice that the coal royalty paid by the Western Coalfields for extracting coal to the tune of Rs 500 crores goes to Maharashtra. Besides, manganese ore companies' dividends are paid to State. Vidarbha will be able to sell surplus power generated and earn handsome revenue. With the additional annual financial assistance from the Central Government for backward State, Vidarbha can very well prosper and become economically viable. Vidarbha produces 6500 MW electricity and has rich coal and mineral deposits.

People of Vidarbha area find themselves 600–1,000 kilometres away from the State Capital Mumbai, and have a feeling of this region being a colony of western Maharashtra. During the course of discussion, stakeholders provided justifications to show how it would be appropriate to delink this area of Maharashtra and declare as a separate state.

While discussing strength of the region one of the stakeholders was of the opinion that, Vidarbha has rich forest cover due to thick forests in Bhandara, Gondia, Chandrapur and Gadchiroli districts. Forest produce was also another source of revenue. Vidarbha has all necessary infrastructure facilities like the State Assembly, High Court, Reserve Bank of India, ministers' cottages and Nagpur has developed into an important city in the country over a period of time.

2.1.24 Summing Up for Vidarbha

The common belief of the people of Vidarbha voiced through their representatives is that the issues of their region have either been overlooked or received a treatment of 'second class citizens' by the decision makers operating from Mumbai, the capital of the state of Maharashtra.

The leaders of Vidarbha from different political parties can come together for expediting economic development.

If the blueprint of balanced development is not properly implemented, alternatives could be as follows,

1. Important economic portfolios may now be shared with Vidarbha leaders.
2. Sub State status for Vidarbha as per 24th Amendment of 1969 as applied to Meghalaya as Sub State of Assam with independent legislature and ministers.
3. Statehood to Vidarbha: As a follow up of alternative two, demand for statehood for Vidarbha on the pattern of Meghalaya carved out of Assam from Sub State to full statehood.

2.2 Marathwada Region

On the 9th and 10th of November 2011, the committee had visited Aurangabad Divisional Headquarters at Aurangabad. Jalna is the most backward district in Marathwada. Hence, during the same visit, the committee decided to visit Jalna on 10th November 2011.

During these visits, committee met and interacted with three types of stakeholders:

1. Members of the Legislative Assembly and Council; Members of Parliament; etc.
2. Representatives of the Panchayat Raj, Municipalities etc.
3. Common public and activists etc.

During the interactions and consultations, several major issues and problems were raised by the stakeholders. These issues are summarized below:

2.2.1 Units of Measurement

Most of the stakeholders from Marathwada region preferred **“Region” as a unit of measurement** for estimating development deficit (usually referred to as “backlog”) of various sectors of the regional economy. It may be recalled that, the stakeholders from Vidarbha generally preferred **“District” as a unit** and those from the Rest of Maharashtra, emphasized **“Taluka” as a unit of measurement**, as is pointed out in the next section.

2.2.2 Demand for Completing Ongoing Irrigation Projects

Many stakeholders expressed the view that, most of the irrigation projects in Marathwada are lagging for years together. Considering the huge drought-prone area (40%) of the region, irrigation projects in Marathwada need to be expedited. Similar views were expressed at the meeting at Jalna by elected representatives and activists who actively participated in this meeting. An expert member of the Marathwada Development Board, expressed his views on Jaykwadi project, relating to construction of dams upstream of Jaykwadi project (Ahmednagar–Nashik districts).

Considering the problem of availability of water in Marathwada region stakeholders provided following major suggestions for developing irrigation facilities in Marathwada.

1. Diversion of water from Vaitarana is necessary in order to improve water scarcity situation of Marathwada region.
2. Review of Water Award (*Lavad*) will be necessary in order to have suitable arrangements of flow of water from sub-basin of Vaitarna to sub-basin of Godavari.

2.2.3 Low Human Development Index

The Executive Chairman of Maharashtra Human Development Mission, Aurangabad, pointed out that HDI of all the districts in Marathwada have been below the state average of 0.58. The mission has selected a few talukas from Marathwada for the improvement of their HDI since 2006. He also pointed out that, the mission has undertaken various programmes in 125 talukas to improve rate of literacy, average years of schooling and health services. It was argued that education and health indices have achieved much better success when compared to Per Capita Income. It was pointed out to us that raising Per Capita Income is proving to be more challenging and difficult task. Creation of additional employment and additional avenues of employment would be necessary to achieve improvement in Per Capita Income.

A senior journalist from Nanded stated in his memorandum that, during Nizam's rule, there were three textile mills in the three regions of the state as a policy of balanced development of these regions. But, since the last two decades, all these mills have been closed or are in a bad shape. This has resulted in huge unemployment among mill-workers.

Nanded, Hingoli and Parbhani districts are known for cotton cultivation. Hence, to revive the development of textile industry in Nanded, he has demanded the 'Textile Park' at Nanded, under the New Textile Policy (2011) of the Government of Maharashtra.

Secondly, he has studied the problems of railways in Marathwada, and has been demanding the transfer of Nanded Railway Division from the South-Central Railway to the Central Railway, for the administrative convenience, employment and commuters' interest. He further argued that this despite being legitimate demand, is being consistently neglected by the Railway authorities.

2.2.4 Marathwada Vikas Manch

This Vikas Manch had submitted a booklet containing several demands of the Marathwada region. Eminent persons have contributed their views to this volume. The booklet contained a number of valuable suggestions like industrialization of Marathwada, infra-structure facilities, improvement in educational standards, improvement in administration, 50% of plan funds for removal of backlog etc.

2.2.5 Aurangabad Samajik Manch, Aurangabad

The Chairman of this Manch and other eminent persons of this Manch have submitted a Memorandum to the committee on various issues relating to development of Marathwada. The major issues of this memorandum are summarized below:

1. The Regional Development Boards should not limit their functions merely to estimation of backlog, but should prepare plans with reference to natural resources and population groups.
2. In terms of Human Development Index and Per Capita Income, all the districts in Marathwada are well below the state averages. It means that the fruits of development have not reached the masses in the region.
3. There is a vast difference between irrigation potential created and actual irrigation in Marathwada. A large part of the region is rainfed area. Hence, the Per Capita Income and HDI of the region are very low. The percentage of irrigation in the region is also very low. Hence, to solve this problem watershed development programme on large scale is the best solution, especially for rainfed farmers.
4. According to the Article 371(2) of the Constitution, funds allocated to one region cannot be transferred to another region. Even then in 2008, the funds allocated to irrigation in Marathwada regions, have been transferred to Rest of Maharashtra region. The Hon'ble Governor has expressed his displeasure over this transfer.

Elected representatives also expressed their views which are important for promoting

development of the region. The very low irrigation potential created in the district was a matter of concern. The water from Jayakwadi project was not available to the district, due to construction of various dams upstream of the project in Ahmednagar and Nashik districts. Since the last five years drinking water problem has assumed serious proportions.

Various groups, (i.e Municipality, Panchayat Raj members) have pointed out that the grim reality of poverty, low level of Per Capita Income (almost 50% of state average), low female literacy rate and poor standard of education and health.

Collector of Jalna presented his innovative programme on Entrepreneurship Development, which has shown good results in Jalna district. This scheme is being implemented in collaboration with the Maharashtra Entrepreneurship Development Council, Aurangabad. This scheme has led to creation of employment among jobless persons in Jalna district. This scheme may be emulated by other districts in Maharashtra as well.

During our visit innovative programme on Entrepreneurship Development was highlighted.

2.2.6 Administrative / Governance Suggestions

1. In Marathwada, there are eight districts and only one Divisional Commissioner. In other regions, there are two or three Divisional Commissioners or one Divisional Commissioner for four districts. According to the Sivraman Committee (GoI), there has to be more administrative control in backward regions, rather than developed regions. Hence Marathwada region needs at least one more Divisional Commissioner at any other suitable place. This proposal has been under active consideration of the Government for the last few years.
2. A very senior and revered civil servant expressed his concern over the falling standard of education under Zilla Parishad administration. Earlier, most of the high schools in Marathwada were Government managed, and hence the quality of education was good. Now due to political interference in transfers and appointments, the standard of education has suffered enormously. To solve this problem, he has suggested the formation "District School Boards" manned by eminent educationists and administrators. This measure would have certainly positive effect on the quality of education in Marathwada.

2.2.7 Gas Pipeline

There was a demand presented to us that Hazira gas pipeline should pass through Marathwada. Jalna city is now considered as the second largest steel forging centre in India. If the Hazira gas is made available to these forging units, it would reduce their cost of production due to relatively cheaper energy source and make these units globally competitive. This would give a big boost to industrialization of Marathwada.

2.2.8 Kadwanchi Watershed Development Scheme: A Success Story

The committee visited Kadwanchi in Jalna district to study the watershed development scheme. The scheme has been successful in terms of drinking water, irrigation as well as in

raising the levels of income of the village community. This example is worth emulating by other watershed areas in the State. This can work as a model for other watershed areas.

2.2.9 Agriculture

Marathwada has very high percentage of non-irrigated land. Approximately 40% area of Marathwada is drought prone. Vijapur – Ashti is a major draught prone belt. Hence, special program should be executed for watershed development in this drought prone belt. Further, while giving permission for new sugar mills, water balance of the region should be properly studied before giving approval.

Due to scarcity of water in the region, special schemes should be designed and implemented for sprinklers, drip irrigation and watershed development and these schemes should be executed through single window operation.

In the era of hybrid seeds, a few farmers are taking special efforts to protect species of conventional seeds (Gavran). Such efforts should be specifically rewarded.

Farmers have to deal with multiple offices at district and taluka level at Panchayat Samittee. All agriculture related issues of farmers should be resolved in one office.

2.2.10 Agro Based Industries

1. Maize, Soya, Cotton, Mosambi, Pulses, Groundnuts are the major agro products in Marathwada region. Efforts should be made by the Government to establish agro based industries at taluka level.
2. For the development of agro based industry, training programme should be organized at taluka level every six month to create awareness and knowledge about agro based industries.
3. There should be offices at taluka and district levels to promote agro industries.
4. Facilities like cold storage, cargo facility should be provided for agro based units.
5. Research and development support should be provided to districts leading in agro processing units.
6. Farmers from this region should be motivated to start agro processing units. Interested farmers should be taken to various exhibitions and existing agro based units to increase their awareness and confidence.
7. Cotton based processing units will give the biggest advantage to Marathwada region. Efforts should be made by the Government to initiate these activities.
8. Complementary businesses like animal husbandry, milk processing should be promoted at grass root level for landless people living in villages.
9. Veterinary doctor assistance should be easily accessible at village level for such animal husbandry programmes.

2.2.11 Dissatisfaction with Governance

1. Since last three decades, people of Marathwada are aspiring for 'Balanced Growth', However, the government has neglected these aspirations. This is clearly reflected in the increasing development deficiency of the region.
2. Government is not serious about implementing recommendations of various committees formed till date and no actions are being taken.
3. Proportion of employment of the local population in the government employment is quite adverse and representation of Marathwada in government services is inadequate.
4. Chairman of Marathwada Development Board should be appointed on priority.
5. Hon'ble Governor should periodically take inputs from Marathwada Development Board.

2.2.12 Education

1. There are two universities in the region, however, the needs and problems of the students are not adequately addressed. Quality of education in the region poses a big challenge. Special efforts should be taken to improve the quality of education in these universities.
2. At school education level, privatization has created its own problems and challenges and the education has become costlier.
3. Special efforts should be made to improve quality of government school education, so that 'needy class' gets good education. If required, the technology based teaching through specially trained and focused NGOs should be implemented for a span of five years.
4. Marathwada is known for its backwardness in education and mindset of people. Hence, special efforts should be taken to have competitive examinations of student finishing school.
5. At each district of Marathwada, there should be separate schools for handicapped students.
6. There should be hostels for girl students with good facilities, so that requirements of the 'needy class' are addressed properly.
7. Efforts should be made to have Ayurvedic university, law school, government engineering colleges, Pharmacy and Microbiology colleges in backward districts of Marathwada.
8. Beed is in centre of Marathwada and the district receives lowest rainfall. Currently there is no railway connection to the district. Though the city is on Solapur to Dhule National Highway, the Highway is just for name sake because it has only two lanes. In short, the city and district as a whole are struggling against all odds. It is apparently difficult to establish industry. Hence, it may be developed as a professional and administrative education hub. Government institutes like Administration Training Centre, Police Training Centre, Medical Training Centre, Technical Training Centre, Sports Training Centre should be established and possibility of shifting important decision making authorities of Government to this district should be considered for growth of this location.

2.2.13 Road, Rail and Other Infrastructure

1. Quality of roads in Marathwada districts is very poor and many projects are incomplete.
2. The highways going through Marathwada are not four-lane highways; there are many bottlenecks, which reduce speed.
3. Parli-Vajinath to Ahmednagar highway should be given high priority.
4. Two-lane track system for railway from Manmad to Nanded should be given priority.
5. Railway project from Ahmednagar to Parli-Vajinath should be expedited.
6. Every district place should have ring roads around the city/town.
7. All districts of Marathwada should be connected by four-lane roads to Mumbai.
8. Every industrial location and district place should be provided with high bandwidth communication.
9. In small towns and villages power infrastructure is poor. Special efforts should be taken to improve power infrastructure.

2.2.14 Industry

1. Railway siding and shed should be provided for Shendra and Jalna MIDC.
2. Gas pipeline should be provided for Waluj, Aurangabad, Shendra & Jalna.
3. City infrastructure of Aurangabad should be improved in line with JNNURM project Pune.
4. Nanded, Latur and Osmanabad have very good transportation facilities. These cities should be given 'mother unit' along with vendor park.
5. Agro industry should be developed in Beed, Parbhani and Hingoli by giving special incentive to industries interested in making investments in the region.
6. Heavy fabrication units of BHEL should be established in non-industrial zone of Marathwada region.
7. For big units, if land is provided in Mega Industrial cities, they should be forced to have the satellite unit in backward region.

2.2.15 Social Projects

1. Various subsidies, assistance, loans, grants are provided to needy sections of society through multiple banks. System of 'one district-one bank' should be implemented.
2. Sugarcane labourers migrating from Beed and Osmanabad districts face major challenges of education of their children. Schools with hostel facility should be established in these two districts.
3. Tribal development office should be established in Hingoli district because of higher tribal population percentage in the district.

4. For Below Poverty Line people, 18 year bond scheme should be implemented, if a girl child takes birth in the family.
5. Primary Health Centers have shortage of manpower. Either recruitment should be done on priority or private doctors should be taken on the panel and effective services should be given in villages.
6. Employment assurance should be given for women studying in nursing colleges.
7. Subsidies given for Self-Help Groups reduce creativity, hence, instead of giving subsidy loan should be given at lower interest rates.
8. Tie-ups of Self-help Groups should be made with retail chains for the supply of wheat, jowar, pulses, and flour products.
9. Special drive should be taken in villages to overcome haemoglobin deficiency in women.
10. Police force should be trained to sensitively handle the complaints of women concerning extortion.

2.2.16 Health

1. Since last fifteen years, Government has taken many initiatives in the fields of health, primary education and women education and the conditions have somewhat improved.
2. There is a significant improvement in western Maharashtra. However, the education as well as health system are lagging in Marathwada region and hence the reforms and improvements are necessary.
3. The way ESIC has empaneled private doctors and hospitals, on the same lines doctors and hospitals should be empaneled in the areas, where the Government facilities are not sufficiently developed.
4. Recruitment of housekeeping staff in hospitals/public health centers is a systemic challenge. Such staff is not adequately available. This often results in serious hygiene and housekeeping challenges in the hospitals and medical centers.

2.3 Rest of Maharashtra

We received several representations from Rest of Maharashtra (RoM) and these may be suitably subdivided in four broad economic- cum - geographic regions.

(1) Konkan (2) Tribal Districts (3) Khandesh (4) West Maharashtra including DPAP regions across these districts.

In what follows, we document an essential summary of representations made to the committee by the stakeholders from the region.

The representatives from Nasik and Konkan regions have strongly complained that their voice in RoM is very weak and their regions remained neglected and under developed. Similarly, stakeholders from Khandesh and Konkan have also demanded separate Regional Boards.

2.3.1 Konkan Division

Konkan is a hilly and coastal region of Western Maharashtra. Its topography and terrain impart very different character to economy of Konkan. Most of the representations have emphasized special kinds of problems faced by Konkan due to its peculiar geographical cum topographical characteristics. Most of the representations have highlighted poor quality of infrastructure in Konkan and stressed the need to have separate norms for development and planning of infrastructure in Konkan. There has been a common demand to expand road connectivity in Konkan emphasizing three major components. (1) conversion of Mumbai Goa Highway in to four-lane road in next two to three years (2) development of double track/lane of Konkan Railway and (3) development of sea routes and estuary routes. Many of the Wadis and villages remain disconnected in the monsoon season and there is an urgent need to strengthen the road network connecting various Wadis and villages. It is also emphasized in the representations that due to heavy rain fall, the cost of maintaining the existing roads is much higher in Konkan region and Zilla Parishads in Konkan require additional outlay of funds for routine maintenance of such roads.

There are several proposed port development investment programs inclusive of public as well as private sector participation. All these ports require well developed West-East road connectivity which needs to be initiated as urgently as possible. Being a coastal economy, fisheries constitutes significant economic activity in Konkan. The prospects and potential of fisheries development is intimately linked with port development projects and similar to other cargo, the fishery products require well developed surface road connectivity to reach prospective markets located in Eastern Districts.

Due to the special topographical and precipitation conditions planning of irrigation projects in Konkan deserves to be assessed on the basis of the norms which may be different from those employed in plateau regions. Pendse Committee report of Development of Water Resource and Irrigation of Government of Maharashtra has pointed out the need for different view of irrigation prospects in Konkan. Reiterating the recommendation of Pendse Committee most of the representations have argued in favour of series of small dams, check dams and bunds in the river belts and use of the stored water for mini hydro power units conjunctively with lift schemes for development of Agriculture and horticulture. It has been pointed out that roughly every taluka can have a hydel - power project and will be supported by staggered check dam storage of water. Various groups have emphasized supply of irrigation water through closed pipe lines and phasing out of open canal flow based water supply as early as possible. One of the representations argues that proper micro planning may provide average potential of ten million cubic meters of Water capacity dam per Wadi. It is also pointed out that such series of Water Bodies will also supplement tourism industry in form of water storage facility afforded.

Given the horticulture based economy of Konkan, many farmer groups have demanded need to invest in post harvest treatments of horticultural crops, packaging centres, cold storage chains and warehousing. We have noticed increasing voluntary efforts in favour of group farming and contract farming. Demand has been made to us that at least every taluka should have a common processing centre for commercial processing of fruit crops. There are many new areas which hold promise for diversification of agriculture in Konkan and the Government

support for technological diffusion as well as initial impetus would be necessary. This includes spice crops, tuber crops, rubber, aromatic & medicinal plants, promotion of new varieties of fodder grasses & animal husbandry, honey & mushroom production. Mango crop faces distinct kinds of risks. Many submissions have made a plea that mango as distinct horticultural crop be included in crop insurance schemes. One of the submissions we received has argued that nearly four lakh acres of laterite rock land should be planted with Alphonso Mango.

With nearly 720 k.m. of sea coast in Konkan, fisheries constitute a major source of livelihood for significant section of population (approx. 2,25,000 fishermen population). This sector currently operated mostly by traditional small boats which co-exist and compete with large size mechanical trawlers. These small fishermen need to put together their resources for their gradual transformation into mid size mechanical boats. Such a cooperative effort on the part of fishermen may require financial support from the Government on the lines of Sugar Co-operatives.

All of the representations made to us have emphatically argued that future of Konkan economy hinges on growth and prospects of tourism. Konkan has a huge potential for development of tourism and it can emerge as a major centre of tourism in Maharashtra. However, there has been very limited effort in developing brand based campaign for promotion of Konkan tourism. Private sector initiative in this sector is significant as well as vibrant. However, the present policy of CRZ norms has stifled any meaningful development of this sector. Most of the attractive tourist locations deserve to be duly equipped with modern, yet ecologically friendly hotels, restaurants, sports and entertainment facilities. However, the CRZ policy has virtually created a standstill in creating these vital support. There is also significant demand for Government support in developing coastal ride tourism and airport connectivity to Ratnagiri through the present airport availability exclusively devoted to coast guard staff. Two representations have argued for hospitality development management courses at various levels in educational institutions. It has been estimated that on an average every district would have at least 250 potential for these centres. Many organizations as well as political representatives from Zilla Parishad and Assembly Constituencies of these regions have lamented poor performance of Sindhudurg district when compared to its adjacent tourist region of Goa. It has been argued to us that the scenic beauty of beaches in Sindhudurg district is even more attractive than comparable beaches in Goa. However, the neglect of this potential in the present official policies has been the major cause of its under development as well as poor utilization of tourist potential.

2.3.2 Nasik Division

Many of the representations made by elected representatives pertain to drinking water supply and irrigation deficit in DPAP talukas of the district. It has been argued to us that resources available with local self government are often too inadequate for operational and maintenance charges of the water supply scheme. In their representations some of the submissions have also suggested alternatives in the resource use and planning. In one of the representations it was pointed out to us that Malegaon- Satana- Sakri- Chinchpara Project be added to the already approved Manmad - Indore Railway Project.

There has been a demand made for establishment of a Tribal as well as an independent Sports University in the tribal dominated regions.

2.3.2.1 Neglected Khandesh

Elected representatives from Nasik District have argued that within Rest of Maharashtra there exists a notable inequality and discrimination. According to these representations, in the allocation and distribution of funds, needs of Khandesh districts are not considered adequately and hardly five per cent of the funds of RoM Regional Development Board are allocated for Khandesh. It was also pointed out to us that Nagpur Pact was a political pact and not aimed at economic development. Hence estimation of backlog and distribution of funds based on region as a unit would be inappropriate. North Maharashtra districts have suffered due to choice of region and district as relevant allocating units. The representatives recommended that the computation of backlog should be made with 'taluka' as the appropriate unit.

The Tapi basin of North Maharashtra has lowest quantum of water that could be tapped and most of the Godavari basin areas in this district are draught prone. In order to overcome this shortage, there is a demand for planning of irrigation projects based on 50% dependability instead of the present criterion of 75% dependability. Farmer groups in this region have suggested increase in the subsidy of micro irrigation from present 50% to 90% and the present limit of five acres for the purpose of subsidy should be relaxed. There has been demand for revival of '*phad*' system with necessary support by Government and distribution of water to water user societies on volumetric basis. In order to increase area under irrigation, river linkages between Tapi and Girna Rivers have been suggested. In addition to this, in submissions received, several other water diversion schemes have also been suggested to us. Elected representative of Dindori has argued for more intensive survey and use of hilly regions in Dindori and Peth for the purposes of series of different sized dams which would supplement present six large dams and thirteen diversions schemes. Similarly, it has been argued to us that conservation of the forest requires establishment of forest lakes. For storage of larger water bodies meant for forest protection the present forest rules should be relaxed and suitably modified. In order to facilitate approval and progress of drinking water as well as irrigation water projects, the prior water availability certification conditionality should be relaxed for tribal regions.

Nandurbar and Dhule districts of Khandesh have very large tribal population. The elected representatives of these tribal sections have complained about various deficiencies in functioning of the Tribal Sub Plan schemes. Most of the tribal population resides in hilly and forest regions. Due to reservations and restrictions of the Forest Act and Forest department, development of roads has been held back and the area has remained very poorly connected to adjacent regions.

Dhule, Nandurbar and Jalgaon have large tracts of semi-arid and poor rainfall as well as water scarce regions. Many of the organizations and representatives have voiced their dissatisfaction with the extant policies dealing with the development gaps. Many

of them have advocated the use of taluka as the appropriate unit for identifying development gap. Many of the submissions have complained about the discriminatory treatment within districts.

Similarly, most of them have drawn attention to difficult terrain of the region and need for redefining appropriate norms. There have been long pending demand for Manmad-Indore railway connectivity which was voiced to us by many stakeholders.

Tapi Irrigation Development Corporation has listed several incomplete as well as alternative schemes for 'accelerated benefit' and enlarged coverage of irrigation facilities in this region.

Chandwad and Deola are the two persistently draught affected talukas. The representative from this region have argued in favour of reorienting east flowing rivers towards west and implementation of Daman Ganga project in addition to several small irrigation schemes and deepening of existing canal network to improve their carriage capacity.

Similarly, Igatpuri and Tryambakeshwar talukas are distinct hilly regions with very high rainfall (2500 to 4000 m.m). However, due to the nature of rocky topography it is difficult to store the rain water received. Hence in spite of high rainfalls these talukas suffer from severe water scarcity after the rainy season. Despite availability of irrigation water, large tracts of land in Surgana, Peth, Igatpuri and Tryambakeshwar talukas of Nasik suffer from extreme water scarcity. Due to the hilly terrains of these talukas, conventional irrigation canal system is mostly unfeasible. Hence, there is a need to tap and exploit water potential through Lift irrigation schemes. Increased availability of irrigation water would considerably improve agricultural productivity and employment in Surgana, Peth, Igatpuri and Tryambakeshwar talukas. It would alter the traditional cropping pattern mostly dominated by paddy and raggi and promote several vegetable crops. This shift in the cropping pattern would provide enduring basis for illumination of malnutrition as a problem, in these predominately tribal talukas.

In the representation from Nasik Zilla Parishad, a demand has been made for revival of monopoly procurement of grain produced by the tribals. Similarly, to enlarge the access of benefits of several schemes to tribal population, the income limit is expected to be raised to Rs. 40,000/-. Most of the residential schools for the tribals are available upto Xth Standard (SSC). In order to improve the access to further higher education, demand for higher secondary schools and colleges for tribal regions have been made.

Most of this hilly cum tribal talukas do not have *pakka* roads connecting villages. Many of these Wadis and Padas have the population size of 50 to 100. Due to population criterion of Prime Minister Gram Sadak Yojana most of these Wadis and Padas remain excluded from the scheme.

We have also received submission from Malegaon which argues for cancellation of MIDC. It has been pointed out to us that land has been acquired with reservation remark on 7/12 extracts. As a consequence of such reservation farmers are unable to

get loans from banks nor can they sell or purchase the potentially acquired land. Malegaon MIDC was sanctioned 30-35 years back but it has no operative unit so far. Considering the resistance of the farmers and weak prospect of the functioning of MIDC, there has been a demand for repeal of the MIDC scheme in Zodage.

In these two talukas, there has been a demand for conversion of flood control canals into irrigation canals. The need to undertake de-siltation of traditional, small and medium size irrigation scheme lakes and further in sensitization of farm funds by raising the subsidy on plastic paper to 75% to 90% has been stressed.

There are several small but historically significant religious pilgrim centers. Restoration and conservation of many of the ancient temples would provide further boost to 'yatra' based tourism in this region. It also needs to be appropriately supplemented by proper maintenance of bridges and roads in this region.

Malegaon is one of the large urban centres in Nasik District and it has been expanding fairly rapidly. It has been pointed out to us that financial position of such Class I, Class II towns is extremely weak. Very large part of expenditure is on salaries of municipal employees and teachers. The Municipal Corporation has to frequently borrow from the State Government for the payment of salary expenditures. Inclusion and merger of adjacent villages have further increased the burden of this corporation. Such weak Municipal Corporations which have to bear a large burden through merger of villages need to be supported by additional financial packages.

There has been a demand for separate Malegaon District for quiet sometime and our committee received the submissions reiterating the demand.

Nasik district has several emerging and established industrial sectors considering pre-existing textile units in Malegaon and Yeola. Development of textile cluster for Malegaon and Yeola has been suggested.

Small Irrigation Schemes electrification of 'wadi' and 'padas' and establishment of primary as well as secondary food processing units have been suggested to slow down and prevent large scale seasonal migration from tribal regions.

Similar to Dhule district, demand for establishment of separate universities in Malegaon and Manmad has also been voiced to us.

One of the representations has also argued that regional imbalance has emerged through three different sources (1) imbalance due to investment made out of budgetary provisions, (2) imbalance created due to policy distortion and (3) historical imbalance due to natural resource disparity or geographical and social disadvantages. Several groups have made an appeal to us that special industrial, social, education and health effort would be needed to improve the status of socially disadvantaged group of tribal population.

There has been a demand for additional financial provision for up-gradation and maintenance of primary schools and protective walls for the primary schools to

prevent encroachment and illegal occupation in the adjacent compound of primary schools.

Similarly, there is a heavy demand for up-gradation and maintenance of Primary Health Care Centres (PHCC) as well as establishment of new Primary Health Care Centres and relocation of some of the existing Primary Health Care Centres to improve reach of the services. Vacancies and non-availability of qualified personnel in PHCC and urgent need to fill these vacancies have also been highlighted in several submissions. Given the inaccessible and hilly terrain the PHCC require a fleet of vehicles and ambulances. Maintenance of these vehicles needs to be sufficiently provided for. Paucity of these vehicle/ambulance support results into poor access and poor quality of health services.

It has been pointed out to us that the benefits of the schemes under Tribal Sub Plan are prevented due to variety of pre- conditions imposed in implementation of these schemes.

2.3.2.2 Water Scarcity Areas

Most of the representations from Ahmednagar highlighted regional imbalance within District. Most notably Parner, Srigonda, Karjat, Jamkhed, Pathardi, Shevgaon, Sangamner and Akola were pointed out to be the talukas with extreme irrigation and drinking water scarcity. Similarly, it was argued that despite being the largest district, when measured by areas, it suffers from non availability of well surfaced 'pakka' roads. About 60 to 70 percent of village roads happen to be un-surfaced 'kuchha' roads. Some of the elected representatives have argued that given the changed circumstances, the norms for implementation of Employment Guarantee Scheme deserves to be revised. If EGS works allow for 90% skilled and 10% unskilled labour, large number of infrastructure works such as tanks, nallah bunding, KT weir works etc. can be successfully completed within a short span of time. It was also argued that the district has several important religious pilgrimage places, which can be further developed and harnessed to generate potential of tourism in a more systematic way.

2.3.2.3 Taluka as Unit of Measurement

The elected representatives of this district have also argued in favour of determination of backlog with 'Taluka' as the unit of measurement. It has been pointed out in different representations from this district that the Government aid in reviving the lift irrigation scheme would increase the area under irrigation to the extent of 42000 acres. This district has emerged as one of the leading districts in cotton cultivation. This has led to demand for Government Aided Project for integrated textile processing (i.e. from spinning, weaving of textile products). The farmer organizations of this district have demanded increase in micro irrigation subsidy for horticulture products and establishment of food product units.

Akkalkuwa and Dadgaon are the most difficult inaccessible talukas of Nandurbar. The HDI of Nandurbar district is the lowest. Nandurbar district in general and these

two low access talukas in particular suffer from extremely poor road and bridge connectivity. Several schemes which were started four to five years back have merely remained on paper and many of these so called completed works are of extremely poor quality. Similar complaints have been made regarding poor quality and wasteful expenditure in Pradhan Mantri Gram Sadak Yojana (PMGSY).

2.3.3 Pune Division

The Five Districts of Western Maharashtra namely Pune, Sangli, Satara, Kolhapur and Solapur have several permanently drought prone talukas. In the Pune Revenue Division there are 58 talukas and 32 of them are permanently drought prone talukas. These regions suffer from extreme water scarcity and very frequent occurrence of drought and famine. Most of the representations made to us from this district highlight this burning problem.

Drinking water availability in general and in the small as well as large township in particular has been flagged as one of the notable dimension of this burning problem in these districts. This has been sharply reflected in various submissions made to us. Various organizations working for rational and equitable use of water for all purposes (i.e. drinking, agriculture and industry) have made a strong plea for the water policy that assures equitable water sharing among different regions and crops as well. They have also emphasized the need for watershed development approach as the prime thematic principle in planning and use of water resources.

It has been argued that given the nature of extreme diversity within districts the ***imbalance should be measured by taking taluka as the appropriate unit which would more accurately depict extent of development deficiencies***. Some of the MLAs have argued in their submissions that present method of planning and allocation deliberately favour few talukas within a district at the cost of remaining deprived talukas. Similar pleas have been made by hilly Western Ghat taluka representatives. Among all the public hearings of the committee in these districts, repeated case in favour of measurement of imbalances at 'taluka level' was vociferously made.

Most of these talukas experienced high frequency of very low value of '*paisewari*' across decades. The drinking water shortages are very acute and most of the villages have to survive with meager supply of water through tankers. Almost for half the year, supply of water based on tankers is the only source of water for these regions. Some of these drought prone area talukas are located at higher altitudes and require the water to be lifted to higher heights. There are several lift irrigation schemes which were designed for these somewhat high altitude drought prone areas. However, many of these schemes have come to a standstill because of heavy outstanding electricity charges. Thus, the region faces a very anomalous situation of non working system of water supply availability and heavy expenditure on supply of water through tankers.

Maharashtra Government initiated material actualization of water allocated to it by the Award. For this purpose, Government of Maharashtra has established Maharashtra Krishna Valley Development Corporation (MKVDC). Most of the irrigation projects of these districts are covered under MKVDC. In the initial phase between 1997 to 2007, there was heavy emphasis

on creating stored water potential. However, further investment needed in distributional system is yet to take place. Consequently, we have received several demands which emphasize availability of such unutilized water and the need for necessary last mile effort in the form of investment in distribution and use of water.

Elected representatives have argued to us that the present formula of allocation of investible resources across regions has held back and delayed the prospect of completion of these near completed projects. It has been argued to us that all those projects where State Government is accessing resources from outside such as NABARD's Rural Infrastructure Development Fund or Accelerated Irrigation Benefit Program of the Union Government, should be kept out of the present Governor's formula for division of resources between regions. Similar complaints have been voiced in districts of Pune and Solapur as well.

2.4 Interaction with Representatives of Tribals

We had extensive interaction with the elected representatives of tribal region. These representatives have expressed their anguish about persistent neglect of tribal regions. Most of them voiced several grievances concerning access to land, displacement of tribal population as a consequence of developmental projects, poor state of education and Ashram schools, drinking and irrigation water scarcity, distressed migration and deprivation of their forest rights and trading of minor forest produce like lac, tendu leaves, honey, gum etc. All of these MLAs have expressed their disappointment about political and institutional provisions for tribal development. In their view, working of Tribal Advisory Committee does not seriously handle and address their grave difficulties and many of the recommendations of TAC are never seriously implemented. Many of the irrigation projects in the tribal region have been held back because of potential water submergence of forest areas. The representatives have made a plea that irrigation projects with water-submergence of two percent of forest area need to be planned and implemented. Similarly, needs of the tribal areas should be fulfilled by planning small local water storages. They have also argued for substantial improvement in the quality of education imparted to tribal children.

Tribal areas face irrigation and drinking water shortages. Many water supply schemes are designed and constructed in tribal areas but supplying water to urban areas. Tribals are not allowed to derive benefits from these schemes. Tribal representatives perceive this as a gross unjust discrimination.

2.5 Representations Received by the Committee

Representations received by us have certain noticeable broad characteristics. Firstly, there is a palpable sense of frustration and disappointment across regions. There is a strong feeling of deliberate neglect in all the backward regions of Maharashtra. Given the nature of explicitly declared policies, many have tried to focus on inadequacy of funds available and utilized in the backward region. In particular, the representations from Marathwada and Vidarbha the notion of financial backlog has been very strong in public perception of the problem.

Representatives from Vidarbha predominantly preferred 'district' as the relevant unit of measurement. On the other hand in Marathwada region preference was for 'region as a whole' as an appropriate unit. In Rest of Maharashtra, there are several tribal and DPAP talukas. The relative economic stagnancy and

deprivation of these regions is at par with similar areas in Marathwada and Vidarbha. Hence preference was towards 'taluka' as the appropriate unit. This is reflective of high degree of intra-district development disparities and perceived elite capture at intra-regional level. Many of the representations were primarily concerned about developmental aspirations as well as inadequate Government initiatives to trigger and inspire growth potential of the respective regions. According to them, the real core of regional imbalance consists of the deprivation in growth and development opportunities. They also voiced their concern about inadequate responsiveness of the development administration to regional specificities. They felt that the existing Government policies and machinery were not in consonance with their aspirations. Groups and experts suggested solutions to region specific problems. Their proposals argued for the policies that would harness the growth potential and advantages specific to the regions.

2.6 Learnings from the Visits

Committee gained considerably by regional visits and following have been the important learnings from the stake holders.

1. There is hunger for more rapid growth in all regions. To achieve better regional balance and eradicate poverty, higher rate of inclusive growth is necessary.
2. Greater decentralization and regional empowerment will be essential for speedier decision making and its effective implementation.
3. There is a need to address issues of continued neglect of tribal areas and inadequacy in enforcement of their legal rights.
4. The urgency and centrality of rapid development of water resources and their optimum utilisation was one of the central issues raised in every region. These water related discussions were always well informed and also sometimes contentious. The emphasis of these discussions varied in different regions or sub-regions. In Western Vidarbha, Marathwada and some parts of Western Maharashtra, the issues relating to water scarcity and livelihood security were highlighted. Eastern Vidarbha and Konkan areas face the problem of poor harnessing of their water potential. The challenge of meeting the new demands for water on account of the increasing urbanisation and industrialisation in all regions of our state was yet another critical aspect. Insights gained from our state-wide meetings with the stakeholders has been important in shaping our approach and our policy proposals.
5. The levels of mobilisation of social capital are uneven amongst the regions and this has considerable impact on development outcomes.
6. There exists a growing "trust deficit" vis-a-vis commitment of public authorities and which is leading to a feeling of betrayal amongst stakeholders. While expressions of such sentiments and views were heard in all the regions of Maharashtra, the intensity was perhaps stronger in Vidarbha. We noticed perceptible erosion in 'bonding' between the regions.



CHAPTER 3

Regional Development: Trends and Patterns in the Recent Past

3.0 Introduction: Backdrop

In last two decades, Indian economy has undergone multi-dimensional transformation. The economy has moved away from a regime of low three to four percent rate of growth. In last decade, rate of growth has often been double than earlier era. *Indian economy has become a promising vibrant economy of the 21st century. Notwithstanding a temporary blip, it is safe to say that Indian economy has broken away from the earlier sluggish rate and moved on to a higher growth phase.* There are many causes of this remarkable transformation. Departure from previous stifling regulatory policy regime and allowing greater freedoms in tune with the growing market opportunities have been, inter alia, liberated and unleashed the economy's potential that had remained repressed. In last two decades, the economic and political conditions in India in general and Maharashtra in particular has changed enormously. *In particular we have transited from one party rule to a more fractured polity realized in the presence of regional parties and coalitional governments at all levels.* The question of regional imbalance should be understood in the context of the dynamic economic and political conditions. In this chapter, we portray a synoptic view of the nature of changing economic opportunities, realized growth potential, changing policy paradigms and extent of development disparities as they are obtained today. A brief outline of the nature of economic growth and extent of developmental disparities across regions of Maharashtra will provide a necessary benchmark for gauging the nature of regional development challenges ahead within the parameters of a changed context.

3.0.1 There have been several major changes in the Indian and Maharashtra's economy since FFC submitted its report. Size of the Indian economy has grown tremendously. GDP of India in 1984-85 was Rs. 2,35,113 crore, which has now become Rs. 94,61,979 crore in 2012-13, GSDP of Maharashtra was Rs. 25,558 crore in 1984-85 which has now become Rs. 13,72,648 crore in 2012-13. In other words, *Maharashtra economy itself now is several times bigger than the Indian economy in 1983-84.* Maharashtra has been one of the major industrialized and progressive states. In the year 2012-13, Maharashtra's GSDP was Rs. 13,72,648 crore which accounts for 14.51 per cent of National GDP. Average rate of growth of Maharashtra's economy has been consistently higher than the national average rate of growth. Maharashtra's share in the national income has always exceeded its share in population. When FFC submitted its report in 1984, the economy of Maharashtra was much different than what it is today. If measured in current prices the size of the Indian economy has grown enormously. In the earlier decade, the share of Maharashtra in Indian economy was approximately 12.38%. For the year 2012-13 this share is expected to be 14.51%. (Economic Survey of Maharashtra 2012-13, page23). Share of service sector in Maharashtra GSDP has been growing even faster than the share of service sector at the national level.

3.0.2 Our primary concern here is to portray the nature of the dynamics of Maharashtra economy in its regional perspective. Historically Maharashtra has been formed by merging three distinct categories of districts: Marathi speaking districts of (1) Bombay Provinces (2) former Central Provinces and Berar (Vidarbha) and of (3) Hyderabad State under Nizam i.e (Marathwada). Relative economic lag and underdevelopment of Vidarbha, Marathwada and the drought prone areas of Western Maharashtra & Konkan was well recognized when these regions were confederated into one 'linguistic' state. This is well illustrated in the celebrated speech by Shri Yashwantarao Chavan, first Chief Minister of Maharashtra. Relative economic lag may have several historical, social and political causes. In particular, proximity to Mumbai and other industrial centers like Surat and Ahmadabad in Gujarat were favorable for the districts in western Maharashtra. Except a few traditional textiles mills and handicrafts Marathwada and Vidarbha did not have a very large number of industries. This handicap of these regions was recognized by Government of Maharashtra. But the measures applied to redeem this condition seem to have worked much feebly than expected. One of the learnings from economic studies and empirical evidence is that traditional industrial dispersal policies did not work then and with the changed economic environment are unlikely to work now. FFC and Indicator and Backlog Committee in their recommendations have implicitly and explicitly reflected on this major driving force of growth and development. Both of these committees emphasized the equalization of planned government expenditure across regions with the hope that the above mentioned deficiencies would get more quickly eliminated.

3.0.3 We should therefore appreciate the nature and extent of divergence and disparity as it exists today. We should be aware of the fact that many factors contribute to economic growth and development. It would be unrealistic to expect that all these factors would be readily available in all regions. It is also necessary to recognize that removal of imbalance is not necessarily a function of equal expenditures or ad-hoc fiscal subsidies. We have in our approach and recommendations taken such learnings on board and argued that the balance among regions should be construed as an acceptable level of 'convergence' and it should be attained over a definite period of time through properly designed incentive structures that are based on policy reforms. For this purpose, we have compared the present state of economic conditions across the regions such that it would be possible to set the goal-posts for the policy in terms of the chosen characteristics. We have attempted several indicators and parameters and ultimately settled for those which are not only important for measuring disparity but could also be more frequently observed and monitored over shorter time periods (usually a year) as well.

In our interaction with the stakeholders, we did learn about the role played by history, political initiatives, and social movements. We are very much aware that many of these factors are the result of the political social movements and leadership. Rise of educational institutions such as Rayat Shikshan Sanstha, experiments like Sasawad-Mali sugar factory followed by Pravara co-operative led by Shri Vikhe Patil and guided by Shri Dhanjayrao Gadgil, emergence of milk-co-operative dairies and processing units etc. are very unique features of economic evolution of Western Maharashtra. Such social and political factors that accelerate or retard potential development cannot be 'replicated' by administrative fiat. The institutional support, nature of social learning and social capital formed through the course of history has to be built up by the social and political leadership. Our report makes a plea and appeal to the leadership of the lagging regions to contemplate all such forces that would

accelerate the essential economic progress that would reduce the disparities that lagging regions today suffer from:

3.1 Geography and Demography

We begin with a comparative view of the size of the three regional economies in their various geographic and demographic dimensions. In table 3.1 we present the area and population of these regions (Excluding Mumbai & Mumbai Suburban districts). Reader may also refer to Annex 3.9.

Table 3.1
Share of Regions in Area and Population (Excluding Mumbai)

Region	Geographical Area (^{'00} Hectares)	Share in Area (%)	Population 2011	Share in Population(%)
1	2	3	4	5
Rest of Maharashtra (RoM)	144893	47.4	58187537	58.2
Marathwada	64813	21.0	18731872	18.7
Vidarbha	97404	31.7	23012551	23.0
Maharashtra	307110	100	99931960	100

Source : Registrar General of India & Directorate of Economics & Statistics, GoM.

The shares of RoM, Marathwada and Vidarbha in area and population are important. These are later used in our formulation of the principles governing regional allocations. Population of these regions has increased at somewhat different pace over the last decade. Refer to Table 3.2 and also to Annex 3.1, which give data on population and rates of growth of population respectively. It may be noted that on an average the rate of growth of population in Vidarbha is significantly below that of other regions and Maharashtra (excluding Mumbai). Thane, Raigad, Nashik and Pune in RoM are known to be growing due to in-migration. Similarly, negative rate of growth in Ratnagiri and Sindhudurg is known to be due to out-migration (and lower fertility as well). However, Nandurbar having a higher growth rate of 2.33 per cent per annum (only next to Pune) needs to be closely examined. Three major districts of RoM namely Satara, Sangli and Kolhapur have registered CAGR of less than one per cent per annum. This is probably due to significant decline in fertility in these districts. Similarly Wardha, Chandrapur, Bhandara, and Gondia districts of Vidarbha have less than one per cent per annum rate of growth. Rate of growth of Vidarbha as a region is only 1.11 per cent per annum which is significantly lower than that of RoM (1.81) and Marathwada (1.9). Previous studies on demographic development indicators (e.g. fertility, age at marriage, lower acceptance of family planning devices) show lower performance of Marathwada. This trend seems to have continued in the last decade as well. Higher rate of growth of RoM is a mixture of strong in-migration and lowering of fertility.

Table 3.2
Regional Population CAGR (per annum)

Region	2001	2011	CAGR(%)
1	2	3	4
RoM	48642785	58187537	1.8
Marathwada	15589223	18731872	1.9
Vidarbha	20607842	23012551	1.1
Maharashtra*	84839850	99931960	1.7

Source : Census 2001,2011

In the last decade Maharashtra has experienced rapid urbanization. Table 3.3 indicates the pace of urbanization in the three regions. Evidently the pace of urbanization is highest in Rest of Maharashtra and slowest in Marathwada. Nonetheless it is evident that all the regions are experiencing increasing pressure of urbanization. The process of urbanization is likely to be a little stronger in Vidarbha. The detailed tables of migration for the Census 2011 are not available. But Vidarbha may be experiencing a peculiar mix of in-migration and out-migration. It may be noted that actual population living in and around urban areas is likely to be more than the proportions indicated above. Very large part of urban agglomerations around the bulging towns of Raigad, Thane, Nasik and Pune districts are yet technically reported as being 'rural'. The pace of urbanization poses a very different set of issues and concerns in economic policy making. Nature of local body government in urban areas and urban governance is likely to shape itself much differently in the coming decades. The issues such as provision of drinking water, transport, housing, clean environment will be dominating the policy agenda in the coming decades (see the section on urbanization in Chapter 4).

Table 3.3
Region wise Share of Rural and Urban Population to Total Population

Region	2011		2001	
	% of Rural Population	% of Urban Population	% of Rural Population	% of Urban Population
1	2	3	4	5
Rest of Maharashtra(RoM)	56.7	43.3	61.6	38.4
Vidarbha	64.9	35.1	67.9	32.1
Marathwada	72.9	27.1	75.5	24.5
Maharashtra	54.8	45.2	57.6	42.4

Source : Census 2001, 2011

Nearly 10.11 per cent of the population of Maharashtra (excluding Mumbai) is tribal. Of the total tribal population nearly 61 per cent lives in Rest of Maharashtra. Thane, Dhule, Nashik and Nandurbar are predominantly tribal districts in RoM. Similarly Vidarbha has 32.1 per cent (Table 3.4) of the total tribal population of Maharashtra mostly concentrated in Gadchiroli and Chandrapur districts. Tribal

population is recognized to be the most deprived and disadvantaged section of the population. This section of the population suffers from every kind of feeling of lagging and dispossession. The tribal districts are therefore most laggard districts in several ways. As noted above, RoM which is often construed as an advanced region, has four major tribal districts. *Considering the development deficiency of these tribal districts we have treated them as the virtual regions of under-development. These are the large areas and sections of population that are undisputedly disadvantaged and spread across our 'normal' categorization of regions and are too important to be ignored although they do not constitute the historically and geographically contiguous lagging regions. We have dealt with this 'virtual or imagined' lagging region in a separate chapter of the report (see Chapter 7 on Tribal Areas).*

Table 3.4
Region wise Population of Schedule Tribes (2001)

Region	Total	Male	Female	Share in total ST Population(%)
1	2	3	4	5
Rest of Maharashtra	5,213,052	2,633,510	2,579,542	60.8
Marathwada	608,109	311,649	296,460	7.1
Vidarbha	2,756,115	1,402,595	1,353,520	32.1
Maharashtra	8,577,276	4,347,754	4,229,522	100

Source: Selected Indicators for Districts in Maharashtra and States in India 2008-09

Yet another virtual region that we have considered consists of the drought prone (DP) areas of Maharashtra. These water scarce areas with very low and highly uncertain precipitation face persistent drinking water shortages and stagnant agriculture. These regions are spread across all the rain shadow regions of Maharashtra. We quote below in Table 3.5, the population of the drought prone regions further dichotomized as scheduled tribe and non-schedule tribe talukas. This table has been prepared using relatively more comprehensive definition of DP areas as recently followed by Ranganathan Committee. (However while dealing with the water resource as input we have adopted a more rigorous definition. Hence number of talukas treated as 'water-scarce' differ in the definition indeed we consider a more general concept of water stressed talukas.)

Table 3.5
Population of DPAP Talukas and ST Population

Region	DPAP	Adivasi Talukas	Non-Adivasi Talukas	Non DPAP	Total	DPAP/Total (%)	
1	2	3	4	5	6	7	8
ST	Rest of Maharashtra	2597247	1742496	854751	2524685	5121932	50.7
	Marathwada	283388	58527	224861	324721	608109	46.6
	Vidarbha	1047418	614132	433286	1708697	2756115	38.0
	Maharashtra	3928053	2415155	1512898	4558103	8486156	46.3

	Region	DPAP	Adivasi Talukas	Non-Adivasi Talukas	Non DPAP	Total	DPAP/Total (%)
1	2	3	4	5	6	7	8
Non ST	Rest of Maharashtra	19705045	3080167	16624878	23813807	43518852	45.3
	Marathwada	6316810	152103	6164707	8664304	14981114	42.2
	Vidarbha	7313066	1548959	5764107	10538661	17851727	41.0
	Maharashtra	33334921	4781229	28553692	43016772	76351693	43.7
Total	Rest of Maharashtra	22302292	4822663	17479629	26338492	48640784	45.9
	Marathwada	6600198	210630	6389568	8989025	15589223	42.3
	Vidarbha	8360484	2163091	61973931	2247358	20607842	40.6
	Maharashtra	37262974	7196384	30066590	47574875	84837849	43.9

	Region	DPAP	Adivasi Talukas	Non-Adivasi Talukas	Non DPAP	Total
1	2	3	4	5	6	7
ST	Rest of Maharashtra	11.7	36.1	4.9	9.6	10.5
	Marathwada	4.3	27.8	3.5	3.6	3.9
	Vidarbha	12.6	28.4	7.0	14.0	13.4
	Maharashtra	10.6	33.6	5.0	9.6	10.0
Non ST	Rest of Maharashtra	88.4	63.9	95.1	90.4	89.5
	Marathwada	95.7	72.2	96.5	96.4	96.1
	Vidarbha	87.5	71.6	93.0	86.0	86.6
	Maharashtra	89.5	66.4	95.0	90.4	90.0

Source: Census 2001

It may be observed that by following Ranganathan Committee approach nearly 45 per cent of the population of Maharashtra lives in DP areas. We have applied simultaneous occurrence of relevant criteria to define the severely distressed talukas (Chapter 10 Water Resources).

3.1.1 Some Key Development Indicators

There have been various studies which characterize relative lag with the help of suitable indices. There are multiple options available in conceiving and constructing the indicators that depict regional disparities. One should choose the indicators that encompass larger coverage of sectors and activities. The data on the chosen indicator should be periodically and more frequently available. Moreover, they should be comparable over a period of time.

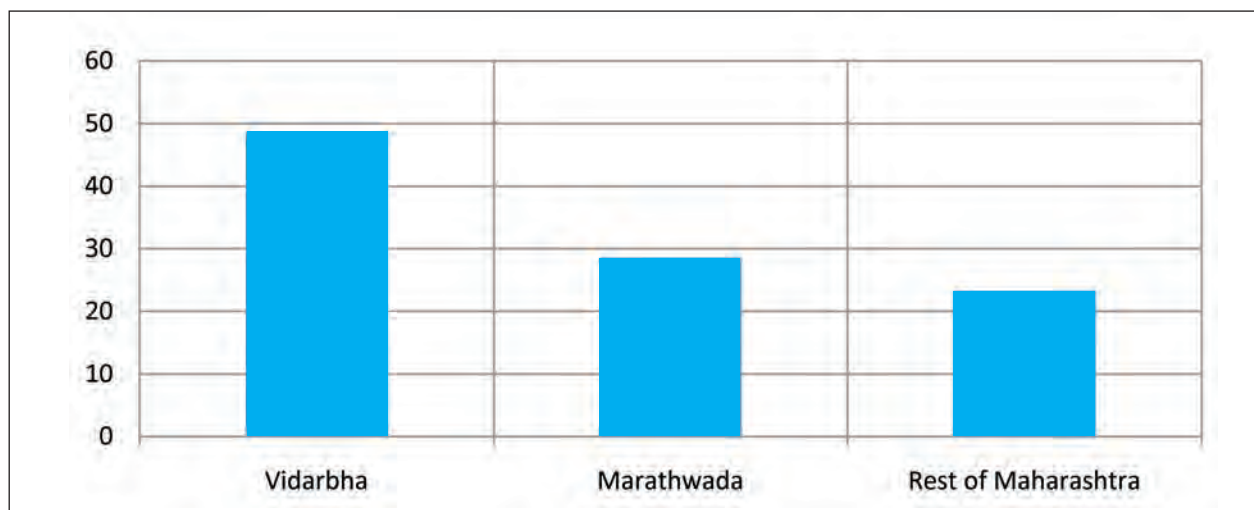
We have chosen to measure the development gap in terms of the elements which are crucial for overall development and growth. Thus it has a mix of elements of physical as well as social infrastructure. Lagging regions need good connectivity vis-à-vis other regions. Road and rail connectivity are the crucial infrastructures for improving market access, labour and material mobility and economic expansion on the whole. Hence the rail and road connectivity of each region is one indicator of developmental gap. Quality of the human resources is fundamentally shaped by nature and extent of education and skill acquisition. Rapid economic growth requires more diversified type of capabilities in the population. Educational facilities and access are the

cornerstone for generating this resource. Every region should have certain minimal level of educational attainment. We have taken **SSC Students Registered and ITI Intake Capacity as the indicators of educational development in the region. Modern agriculture, manufacturing and services require electricity extensively. Availability of 'power' is the critical input for technological transformation of the economy. This is succinctly measured in terms of the per capita availability of power across regions. Similarly poor access and non availability of credit in agriculture is known to be one major cause of the perpetual underdevelopment in agriculture. As the data shows, near stagnation of agriculture in Vidarbha has been the major retarding factor that worsened imbalance across regions. Extent of investment capability and absorption of agriculture is affected by availability of credit to agriculture. This is measured in terms of per capita availability of agricultural credit. And finally the quality of life enjoyed by population is shaped by the nature and extent of health services available. We have developed a comprehensive index of health at the district level (more detailed explanation of this may be found in chapter dealing with Health). We have used this index for measuring the development gap in health.**

So far most of calculations for development gap have been based on the average score of the State. The value for each of these development components for each district or a region is usually normalized with respect to the state average. This may not be the best 'reference' measure for reflecting the extent of development gap. We have, therefore chosen to measure the gap or distance from the average of the top three districts. Choice of any point other than mean as reference level does tend to increase the variance. However, upward bias in measure of variability would implicitly cause somewhat greater allocations to the lagging regions, which in turn would assist in diluting the present inequality.

We present below the above mentioned indicators at the regional level. Since we use these later in our resource allocation formula, *we present the details of underlying data and the computation as well as weights with which they enter the allocation formula, in the 'Approach' chapter.* Here, we present the indicators' (distance from the top three districts) in the form of bar graphs for easy visual inspection of where we currently are, in terms of regional developmental deficits. The detailed district wise data and deficit proportions for different indicators for development gap are placed at Annex 3.2 to Annex 3.7. Please also see Figures 3.1 to 3.7 and corresponding Tables 3.6 to 3.12. It may be observed that the development gap is generally relatively large for Marathwada and Vidarbha as is to be expected given that they are the lagging regions. Apart from purely physical outcome indicators we have also considered social sector outcome indicators in presenting the picture.

Figure 3.1
Road Density (Per 100 Sq. Km.) Distance from Average of Top 3 Districts



Source : Constructed By Committee from data of Public Works Department, GoM

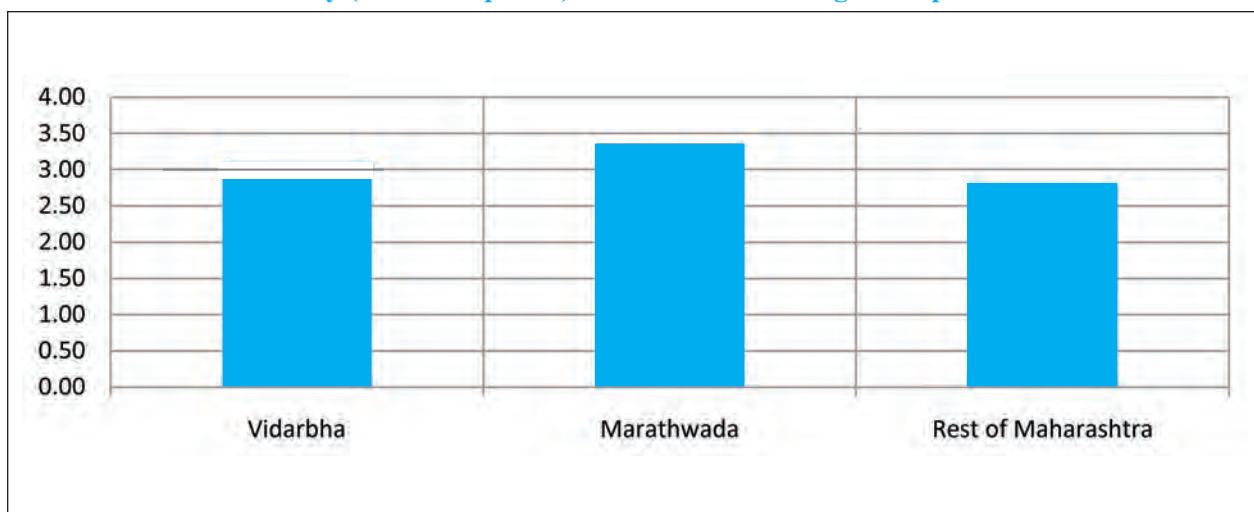
Table 3.6
Distance from Average of Top 3 Districts

(Km.)

Region	Road Density (Per 100 Sq. Km.)
1	2
Vidarbha	49
Marathwada	29
Rest of Maharashtra	23

Source : Constructed by Committee from data of Public Works Department, GoM.

Figure 3.2
Rail Density (Per 100 Sq. Km.) Distance from Average of Top 3 Districts



Source : Central Railway, South East Central Railway, Konkan Railway & Western Railway (Generated by Committee)

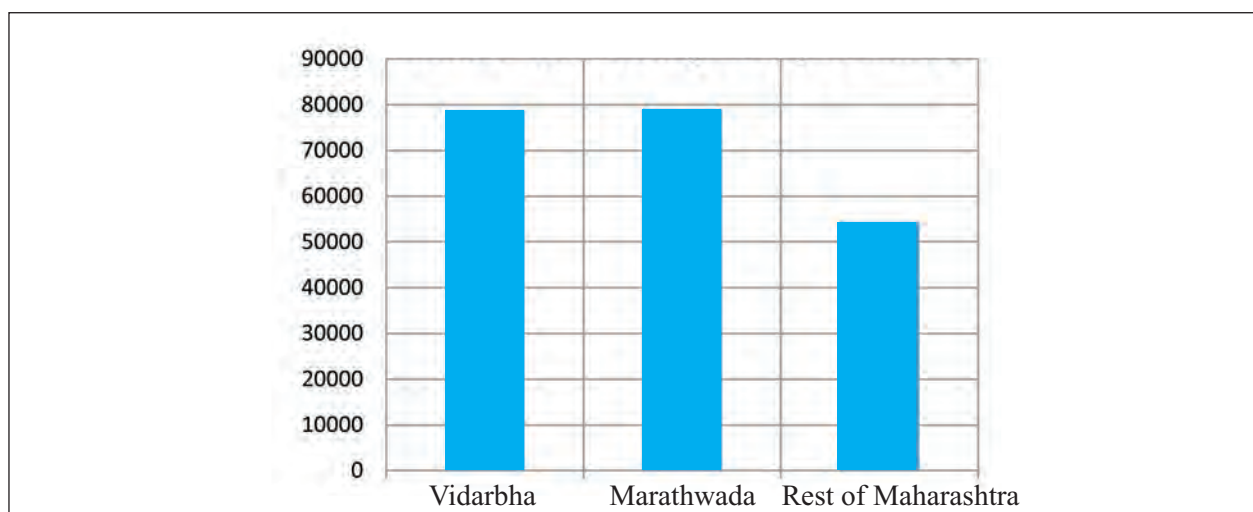
Table 3.7
Distance from Average of Top 3 Districts

(Km.)

Region	Rail Density (Per 100 Sq. Km.)
1	2
Vidarbha	2.82
Marathwada	3.36
Rest of Maharashtra	2.80

Source : Central Railway, South East Central Railway, Konkan Railway & Western Railway. (Generated by Committee)

Figure 3.3
Average SSC Students (Registered)
Distance from Average of Top 3 Districts



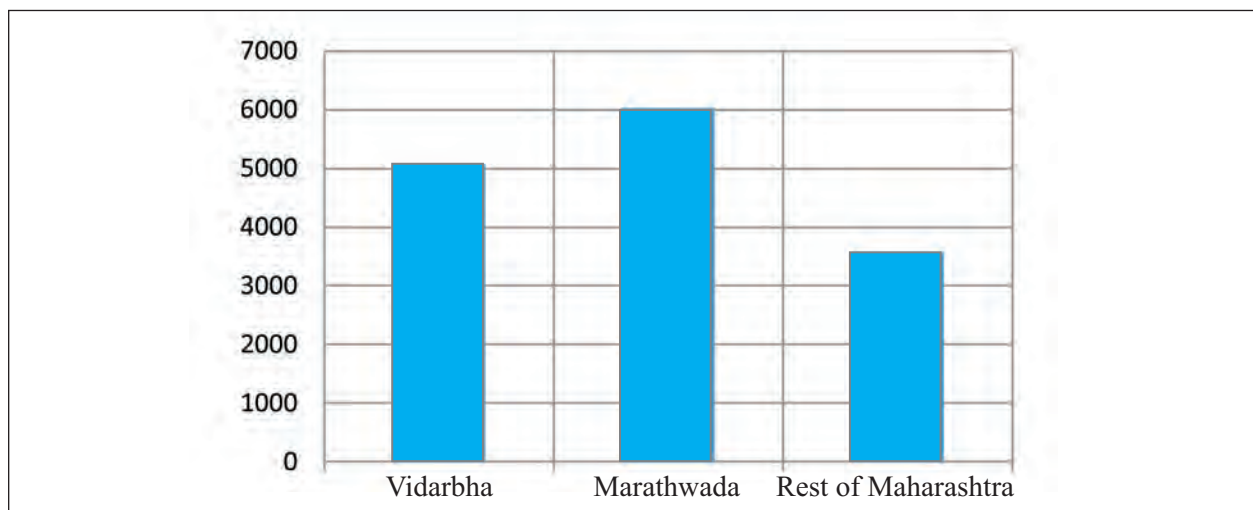
Source : Generated by Committee from MSBSHSE data.

Table 3.8
Distance of Average of Top 3 Districts

Region	Average SSC Students (Registered)
1	2
Vidarbha	78650
Marathwada	79046
Rest of Maharashtra	54407

Source : Generated by Committee from MSBSHSE data.

Figure 3.4
Average ITI Intake Capacity Distance from Average of Top 3 Districts



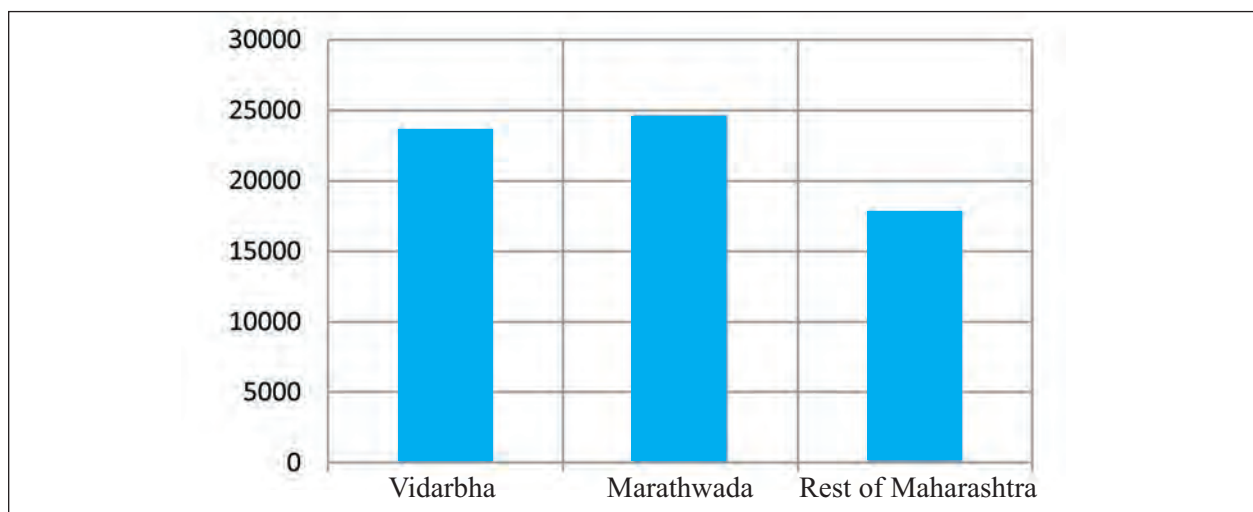
Source : Directorate of Vocational Education, GoM. (Figure Generated by Committee)

Table 3.9
Distance from Average of Top 3 Districts

Region	Average ITI Intake Capacity
1	2
Vidarbha	5073
Marathwada	6027
Rest of Maharashtra	3571

Source : Directorate of Vocational Education, GoM. (Table Generated by Committee)

Figure 3.5
Agriculture & Allied Activities Credit Per Ha in Rs. Distance from Average of Top 3 Districts



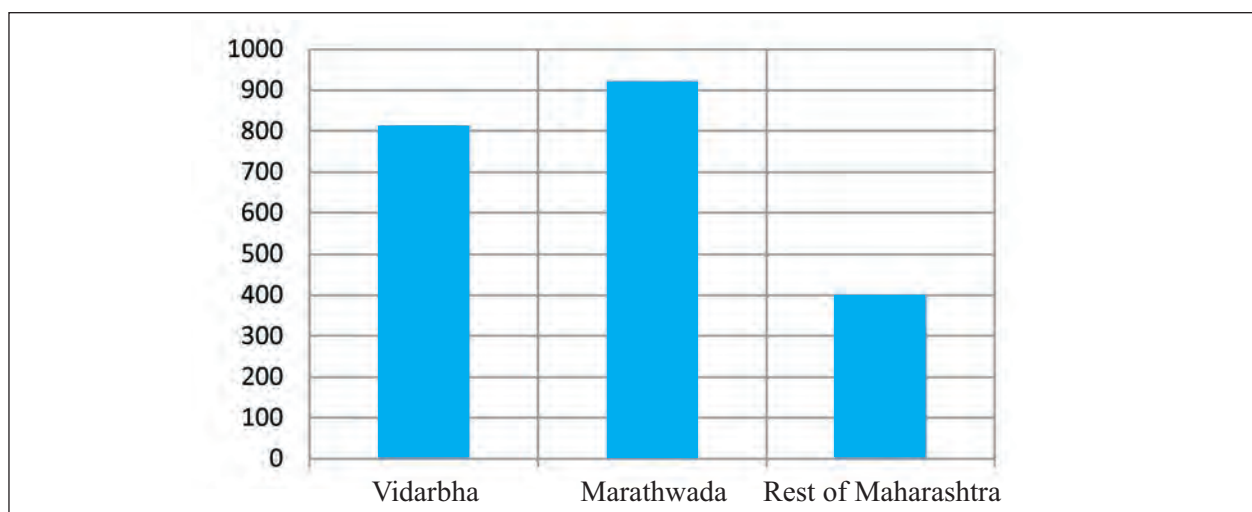
Source : SLBC, Maharashtra (Figure Generated by Committee)

Table 3.10
Distance from Average of Top 3 Districts

Region	Agriculture & Allied Activities Credit Per ha. (Rs.)
1	2
Vidarbha	23688
Marathwada	24669
Rest of Maharashtra	17840

Source : SLBC Maharashtra (Table Generated by Committee).

Figure 3.6
Per Capita Consumption of Electricity (kwh) Distance from Average of Top 3 Districts



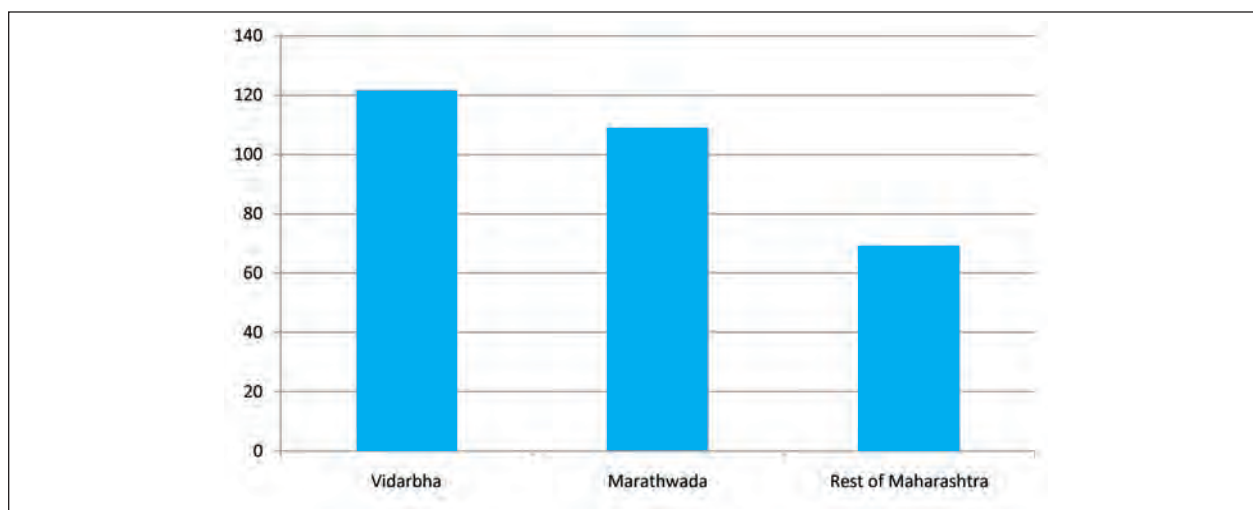
Source : MAHADISCOM Ltd. (Figure Generated by Committee)

Table 3.11
Distance from Average of Top 3 Districts

Region	Per Capita Consumption of Electricity (kwh)
1	2
Vidarbha	815
Marathwada	921
Rest of Maharashtra	400

Source : MAHADISCOM Ltd. (Table Generated by Committee)

Figure 3.7
District wise Comprehensive Health Score Distance from Average of Top 3 Districts



Source : Derived from DLHS-3, DLHS-2, Survey of cause of Death (Rural)-2011, Public Health Department Monthly Progress Report March 2012, Rajmata Jijau Mother Child Health and Nutrition Mission (Figure Generated by Committee).

Table 3.12
Distance from Average of Top 3 Districts

Region	Health Score
1	2
Vidarbha	121.8
Marathwada	108.9
Rest of Maharashtra	69.3

Source : Derived from DLHS-3, DLHS-2, Survey of cause of Death (Rural)-2011, Public Health Department Monthly Progress Report March 2012, Rajmata Jijau Mother Child Health and Nutrition Mission (Table Generated by Committee)

3.2 Macro Economic Development of the Regions in Comparative Perspective:

In the previous sections we have described the demographic and physical conditions of RoM, Marathwada and Vidarbha. These three regions had very different economic history. Except a few urban centers, most of these economies were predominantly agrarian. However, nature of agrarian relations (i.e. land ownership and tenancy systems), average size of landholdings, traditional crop patterns, access to urban markets and commercialization of agrarian production in each of these were very different. With decline of Mughal Empire and rise of British ruled economy, trade pattern within India had changed. Early trade routes diminished in their relative importance. New military cantonments, ports, up-coming industrial locations gained overwhelming prominence. Except few centers like Nagpur and Amravati Vidarbha did not have any such dominant township. Marathwada was always a relatively lagging and neglected region under Nizam. Thus the prospects of natural impulses of modernized economy were relatively weak in both Marathwada and Vidarbha. Except a few mills & traditional textiles and handicrafts Marathwada and Vidarbha did not have a very large

number of industries. This handicap of these regions was recognized and Government of Maharashtra introduced a scheme of lagging area industrialization primarily designed around sales tax exemption for five or more years. This scheme did not prove very effective in elevating the industrial status of these regions. Lack of necessary infrastructure, skilled manpower, lack of supporting lagging and forward linkage industries and above all high costs of doing business in these regions easily overpowered the sales tax based incentives. However, in spite of these overwhelming lackluster performance on the average, Aurangabad and Nagpur did gradually emerge as potential industrial centers of growth. Yet the pace was much slower and spread of impact was inadequate when compared to the large requirements of the large underdeveloped areas waiting to catch up.

We do not wish to undertake a very detailed inquiry of the long history. In particular, there is a plethora of political and historical developments that have contributed to perpetuation of regional disparities. Various non-economic aspects that have bearing on the nature of conditions today have been brought out in the studies that were commissioned for this committee. For example, the nature of political representation, strengths and weaknesses of the political leadership and political voice against regional imbalance have been important dimension of the regional disparity. We do recognize that such political cum institutional dimensions have affected the process of achieving and maintaining regional balance. We recognize the importance of these elements. Committee decided to devote a separate chapter on 'Governance' where these related issues are dealt with in conjunction with economic policy and strategy. We have suggested plausible institutional cum political arrangement for overcoming potentially distortive political influences.

We may first begin by assessing the contribution of each of the region to overall economy of Maharashtra. We do this by first looking at the two sub-periods (as explained later) and then looking at the period 2001-2010.

It is now well accepted that growth of Maharashtra has two distinguishing characteristics viz., its *regionally skewed growth pattern* and its *heavy dependence on the performance of Mumbai*. Regional variations can be analyzed at three levels viz., regional level (i.e. jurisdiction of Development Boards) or at the level of six administrative divisions or at the level of the districts (35 in number).

To begin with we confine ourselves to the regional and division level to draw attention to the broad discrepancies and divergences that exist in their growth pattern. In order to highlight the prominence of Mumbai and also to get a clearer picture about the performance excluding Mumbai we also consider "Konkan Excluding Mumbai (KEM)". We consider the data since a 93-94 in two sub-periods (i) 1993-94 to 1999-00 and (ii) 2000-01 to 2009-10 across the six administrative divisions into which the State is divided.

Konkan division alone is seen to contribute about 40% of the state's GSDP (Table 3.13) in the second sub-period. However, by excluding Mumbai the share of this division drops to below 18%. Thus the prominence of Mumbai is unquestionable. What would be important to track, however, is how Konkan excluding Mumbai progresses and whether it is indeed true that without Mumbai the performance of konkan would be as bad as the worst performing district/ division. The lowest contribution to GSDP comes from Amravati division. A comparison of the divisions across the two sub-periods shows that the contribution of the three advanced divisions viz., Konkan, Nashik and Pune show a small increase in the second sub-period while that of the three lagging divisions viz., Aurangabad, Amravati and Nagpur show a reduction, with the maximum reduction being noticed for Nagpur division.

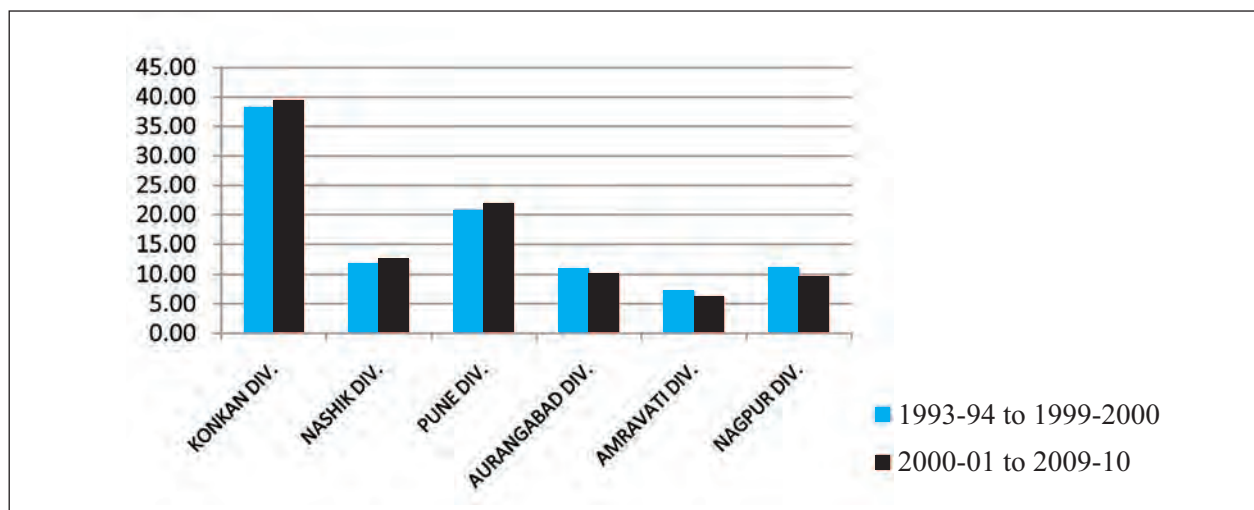
Region-wise the variation comes across even more starkly. The RoM which contributes as much as 71% to GDDP in the first sub-period shows a further increase in the second to 74%, while Marathwada and Vidarbha which together contributed 29% in the first sub-period show a further fall to 26% in the second sub-period. *Thus the first impression that we get is that regional variation across divisions have worsened in the second sub-period.*

Table 3.13
Division wise Contribution to GSDP (%)

Division	1993-94 to 1999-00	2000-01 to 2009-10
1	2	3
KONKAN	38.3	39.5
NASHIK	11.7	12.5
PUNE	20.8	22.0
AURANGABAD	10.9	10.1
AMRAVATI	7.2	6.3
NAGPUR	11.0	9.7
<i>Konkan Excl. Mumbai (KEM)</i>	<i>17.6</i>	<i>17.8</i>
<i>Mumbai</i>	<i>20.7</i>	<i>21.7</i>
Region wise		
RoM	70.9	74.0
Marathwada	10.9	10.1
Vidarbha	18.2	16.0

Source : Committee's calculation based on DES data.

Figure 3.8
Contribution to GSDP (%)



Source : Committee's calculation based on DES data.

To put these contributions in perspective we also present a comparable picture of the proportion of population across the divisions and read this with their contribution to GSDP (Tables 3.14 & 3.13 respectively). Amravati division has about 10% of the population but its contribution is well below 10% (7.2% in the latter half of 90s and 6.3% in the decade since 2000-01). Similarly, Aurangabad division's contribution to GSDP is less than its share in population (15.9% of population and contribution to GSDP is 10.1%). Nagpur and Pune Division's share in population and their contribution to GSDP are more or less on par (Nagpur has about 11% of the population and its contribution to GSDP is just below 10%. Similarly, Pune division has 20.6% of population and its share in GSDP too is about 22%). On the other hand Konkan division's contribution to GSDP exceeds its share in population even excluding Mumbai. Its share in population is 13.4% while share in GSDP is 17.8%. Mumbai clearly has very high productivity. Its share in population is merely 12.8% but its contribution to GSDP is 21.7%. It may be noted that *productivity is low in Aurangabad and Amravati divisions where contribution to GSDP is lower than the share in population.*

Region-wise we see that RoM's share in population is lower than its contribution to GSDP. From our divisionwise analysis, we realize that, this situation is primarily on account of Mumbai and Konkan excluding Mumbai. In Marathwada and Vidarbha we find that their share in population exceeds their contribution to GSDP by almost 5 percentage points.

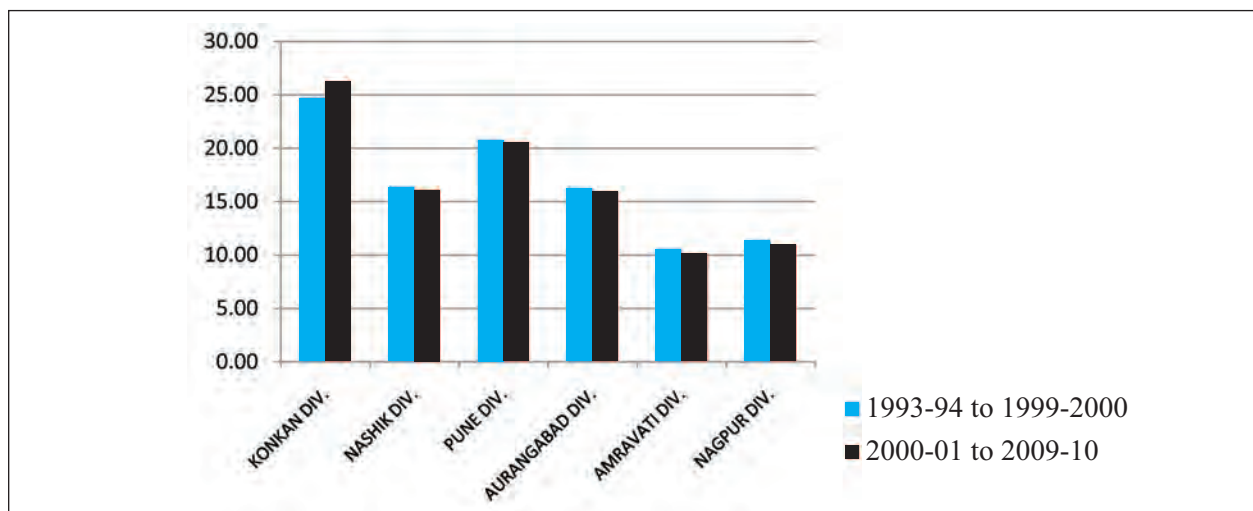
Another observation that we make from Table 3.14 is that the share of population of Konkan excluding Mumbai has risen in the second sub-period. This is interesting as it *signals that out-migration, which Konkan was once famous for, seems to have reduced.*

Table 3.14
Division wise Share in Population (%)

Division	1993-94 to 1999-2000	2000-01 to 2009-10
1	2	3
KONKAN	24.7	26.2
NASHIK	16.4	16.1
PUNE	20.8	20.6
AURANGABAD	16.2	15.9
AMRAVATI	10.5	10.2
NAGPUR	11.3	11.0
<i>Mumbai</i>	<i>12.5</i>	<i>12.8</i>
<i>Konkan Excl. Mumbai (KEM)</i>	<i>12.2</i>	<i>13.4</i>
Region wise		
RoM (Including Mumbai)	61.9	62.9
Marathwada	16.2	15.9
Vidarbha	21.9	21.1

Source : Generated from DES data.

Figure 3.9
Share in Population (%)



Source : Committee's Calculation based on DES data.

In terms of real growth rate of GDDP (2004-05 prices) we notice that growth has picked up in the second sub-period for all divisions. Only for Pune division the already high growth rate has been maintained. Once again *we notice that divisions that contribute large proportions to the GSDP grew at a higher rate than the lagging divisions despite the base effect.*

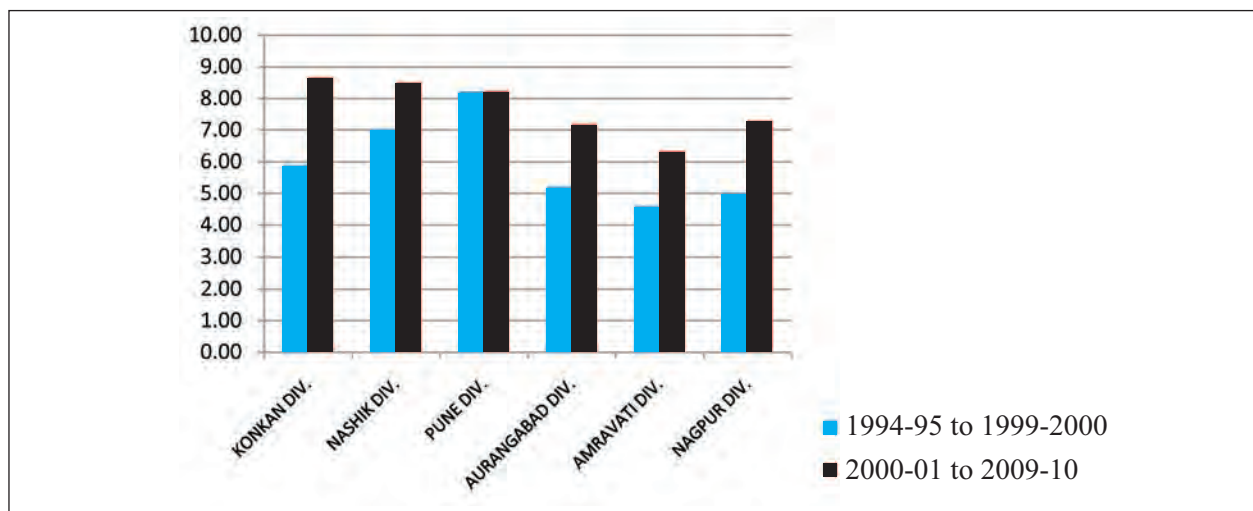
Also, we notice that *growth rate of Konkan Excluding Mumbai (KEM) shows a remarkable improvement in the second sub-period* thus contradicting the conventionally held view that Konkan is seen to be a good performer only because of Mumbai (Table 3.15).

Table 3.15
Division wise Growth Rate of GDDP (2004-05 prices) (%)

Division	1993-94 to 1999-2000	2000-01 to 2009-10
1	2	3
KONKAN	5.89	8.67
NASHIK	7.04	8.51
PUNE	8.23	8.24
AURANGABAD	5.20	7.19
AMRAVATI	4.60	6.35
NAGPUR	4.99	7.30
MAHARASHTRA	6.12	8.10
<i>Mumbai *</i>	<i>6.60</i>	<i>8.79</i>
<i>Konkan Excl. Mumbai (KEM)</i>	<i>5.15</i>	<i>8.55</i>
Region wise		
<i>ROM</i>	6.67	8.50
<i>Marathwada</i>	5.20	7.19
<i>Vidarbha</i>	4.70	6.91

Source : Committee's Calculation based on DES data.

Figure 3.10
Growth Rate GDDP (2004-05 prices) (%)



Source : Committee's Calculation based on DES data.

Given that districts are fairly open economies and movement of people is a common phenomenon, a look at per capita incomes division wise would lend further insight into the existing regional variations. *We find that the variation in real per capita income across divisions too appears to have increased marginally in the second sub-period as is evident from the coefficient of variation (C.V) given below for the two sub-periods (Table 3.16).* A comparison of the maximum with the minimum real per capita income shows that there is a marginal increase here too (from 2.3 to 2.5 in the two sub-periods respectively).

Region wise, the relative position of the regions remain the same in the two sub-periods with RoM at the top and Marathwada at the bottom. However, the Max/Min ratio shows a marginal increase from 1.7 to 1.9 (Table 3.16).

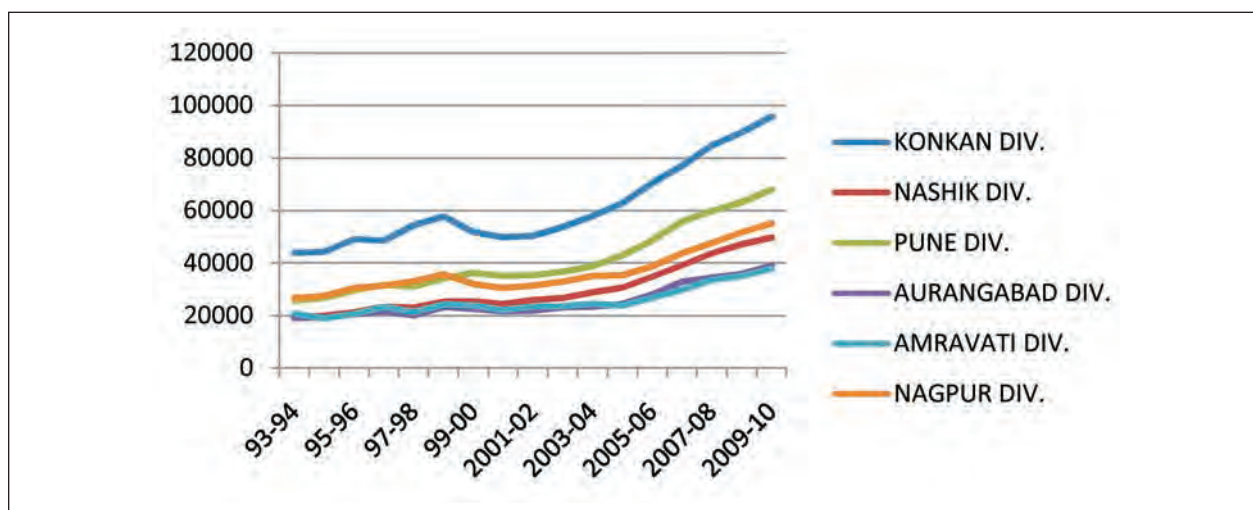
Table 3.16
Real Per Capita Income (2004-05 prices) (Rs)

DIVISION	1993-94 to 1999-2000*	2000-01 to 2009-10*
1	2	3
KONKAN	49926	69187
NASHIK	22453	35069
PUNE	30709	48414
AURANGABAD	20906	28442
AMRAVATI	21797	28031
NAGPUR	30918	40170
MAHARASHTRA	31594	45581

DIVISION	1993-94 to 1999-2000*	2000-01 to 2009-10*
1	2	3
Mumbai	52651	78047
Konkan Excluding Mumbai	47222	60677
STDEV	10986.77	15552.6
MEAN	29451	41552
C.V.	37.30	37.43
MAX/MIN	2.3	2.5
Region wise		
RoM	36193	53684
Marathwada	20906	28442
Vidarbha	26525	34341
MAX/MIN	1.7	1.9

Source : Committee's Calculation based on DES data. * Annual Average for the Period.

Figure 3.11
Per Capita GDDP (2004-05 prices)



Source : Committee's Calculation based on DES data.

Thus our analysis at the division/ regional level leads us to conclude that the *relative position of divisions and regions hasn't undergone any significant alteration but the regional variations have shown an increase and the gap has widened especially towards the end of the time period, with the better performing divisions/regions performing even better and the lagging divisions/regions slipping even further.*

Given the differential rates of growth in population across regions we may compare the rate of growth of per capita income between the regions. In Table 3.17 we present levels of per capita incomes, relative position of Marathwada and Vidarbha vis-à-vis RoM and the rate of growth of the per capita incomes.

Table 3.17
Comparison of Per Capita Incomes by Regions: (GDDPCI at current prices) (2010-11) (Rs.)

Region	GDDPCI
1	2
RoM*	110531
Marathwada	64330
Vidarbha	77382
Mumbai	207211
Maharashtra	106746

Source : Committee's Calculation based on DES data. * Excluding Mumbai

Table 3.18
Per Capita Income of the Regions (Constant 2004-05 prices) (Rs.)
(New Series Based on 2011 census)

Sr.No	Region	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
1	2	3	4	5	6	7	8	9	10	11	12
1	Rest of Maharashtra*	23452	24771	26652	29493	32704	37491	42846	50447	61708	68818
2	Marathwada	15595	15491	16118	17409	18429	19937	24048	27552	33689	40824
3	Vidarbha	19336	19140	20913	22254	24673	25747	30711	35134	42093	52282
	Maharashtra	22803	23072	24370	26220	29015	32174	36884	42151	49630	60708

Source : Constructed from DES data. * Excluding Mumbai

Note : These estimates are based on final data from 2011 census. Hence differs some what from DES data.

Table 3.19
Ratios of Per Capita Incomes of Marathwada and Vidarbha to Rest of Maharashtra

Sr.No	Region	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
1	2	3	4	5	6	7	8	9	10	11	12
1	Rest of Maharashtra*	1	1	1	1	1	1	1	1	1	1
2	Marathwada	0.66	0.63	0.60	0.59	0.56	0.53	0.56	0.55	0.55	0.59
3	Vidarbha	0.82	0.77	0.78	0.75	0.75	0.69	0.72	0.70	0.68	0.76

Source : Constructed from DES data. * Excluding Mumbai

Table 3.20
Rates of Growth in PCI of the Regions (%)

Sr. No.	Region	Rate of growth of Per capita income (CAGR)
1	2	3
1	Rest of Maharashtra*	13.25
2	Marathwada	11.41
3	Vidarbha	11.57
	Maharashtra (excluding Mumbai)	11.55

Source : Constructed from DES data. * Excluding Mumbai (Based on data in Table 3.18)

From the tables above it may be observed that PCI of Marathwada is at best 60 per cent (i.e. 3/5th) of the PCI of RoM and rate of growth of PCI of Marathwada is 11.41 per cent per annum. Similarly PCI of

Vidarbha is approximately 75 per cent (i.e. $3/4^{\text{th}}$) of PCI of RoM and it has been growing at the rate of 11.57 per cent per annum. If Marathwada is to catch up with Rest of Maharashtra and reach the level of 75 per cent of income of Rest Maharashtra by 2025-26, its PCI must grow at the rate of 15 per cent per annum. Similarly, if by 2025 PCI of Vidarbha is to be at least 85 per cent of PCI of RoM then it should grow at the rate of 14.26 per cent per annum. This estimation presumes that the rate of growth of RoM remains the same as today i.e. 13.25 per cent per annum. In other words the big push through infrastructure and strengthening of dynamic comparative advantage based growth in agriculture, industry and service sector in these growth rates of these two regions must be pulled up significantly.

Are these expected rates of growth too impossible? Are they beyond the realm of feasibility? It is necessary to realize that many lagging 'states' have, in recent times, been able to achieve such levels of growth rates by making 'growth' focused choices supplemented by improvements in delivery and governance (See the Table 3.21). The growth rates that regions have already achieved are in fact not the best case scenario. Yet they have been high enough to elicit confidence of superior performance if duly supported by big push and improvement in governance.

Table 3.21
Gross States Domestic Product and Growth Rates (Rs. in Crore)

Sr No	States	At 2009-10 Prices	At 2010-11 Prices	At 2011-12 Prices	Growth Rate 2009-10 to 2010-11	Growth Rate 2010-11 to 2011-12
1	2	3	4	5	6	7
1	Bihar	177537	217814	262230	22.7%	20.4%
2	Odisha	163727	195028	226236	19.1%	16.0%
3	Rajasthan	255295	303358		18.8%	
4	UP	521930	595055	678083	14.0%	14.0%
5	Chattisgarh	99262	117567	135536	18.4%	15.2%
6	Jharkhand	96327	106696	119386	10.8%	11.9%

Source : Constructed from DES data.

Sources and causes of regional imbalance differ across sectors. Generally, all economic activities have inherent propensity to agglomerate to reap the benefits arising out of being closer 'parent industry' which generates demand and assures supplies of various resources i.e. the so called 'external economies'. Hence the incentive to co-locate with others generates agglomeration and location-based specialization. This tendency to agglomerate breeds certain regional imbalance. In the phases of high growth this propensity is overpowering and regional imbalance is likely to aggravate. If the transportation and connectivity are poor then it would worsen the regional imbalance even further. The imbalanced growth pattern across RoM, Marathwada and Vidarbha are the result of this process. One of the most effective policy tools for this would be to eliminate the connectivity barriers. This would open up new scale and size of opportunities for the existing potential and also inspire new potential in the lagging regions. It is thus important to identify the sectors and activities that would speed up this process of discovering path\ trajectory of higher growth. In addition to the big push project aimed at improving connectivity, the sectors having better revealed potential on the one hand and sectors having rejuvenation of stagnant potential of the existing large sectors on the other are crucial components of reducing regional imbalance.

Public goods equalization and improvements in connectivity infrastructure will create significant externalities which in turn would steer the untapped development potential of the lagging regions. At the present juncture it is necessary to reverse the deceleration that has occurred in the last decade. The pattern of growth-convergence that was lost in the previous decade should be restored. Such reversal is eminently feasible in case of Vidarbha. Our analysis suggests that growth propagation in Vidarbha and Marathwada regions has to be a two pronged strategy. Stabilization of agricultural growth through assured protective irrigation for major crops and promotion of new technologies of new diversified agriculture (including crop-pattern shifts, better micro-climate management) will revitalize agriculture of Vidarbha and Marathwada. On the other hand, the big push projects such as roads, port connectivity, railways will have the capacity to alter the regional growth and development propagation significantly and noticeably.

3.2.1 Inequality (Gini):

We may measure the extent of inequality across as well as within regions. Inequality measured in terms of Gini coefficient is presented in the Table: 3.22. The estimates of Gini coefficient reveal that inequality has slightly increased across all the regions. Inequality among regions as well as within themselves has worsened. It is well known in literature as well as in practice that with growth, inequality worsens initially. However, worsening of inequality may have been more severe within districts of Marathwada leading to worrisome feature in the intra sense. Thus, the inequality among regions as measured by Per Capita Income and Gini coefficient needs to be reduced. One should appreciate that the extent of inequality among the regions is not extraordinarily high. For example, the Gini measure of inequality across states of India is 0.28 which is much larger than those reported here. The ratio of highest Per Capita Income to the lowest is 2.5; well below the similar ratio of 8.4 across states (Bihar and Goa). This relatively lower level of inequality is partially a sign of potential basis for convergence one may hope for.

Table 3.22
Region wise Gini Coefficients Using GDDPPC at Constant (2004-05) Prices

Regions	2001-02	2004-05	2009-10
1	2	3	4
Rest of Maharashtra	0.1688	0.1712	0.1737
Marathwada	0.0837	0.1016	0.1114
Vidarbha	0.1355	0.1519	0.1567
Maharashtra	0.1812	0.1904	0.2043

Source : Constructed by Committee from DES data

Note: Gini coefficient varies between Zero (0) and One (1). Gini coefficient close to Zero means greater equality and close to One implies extreme inequality.

3.3 Economic Development: Sectors

We next turn our attention to sectoral contributions, division-wise. The contribution of Konkan to primary sector GSDP is the lowest among the divisions in the first sub-period and this has further declined in the second sub-period. The low contribution of Konkan to primary sector GSDP is to be expected given that Konkan is not climatically suited for agriculture. A further drop in the share of

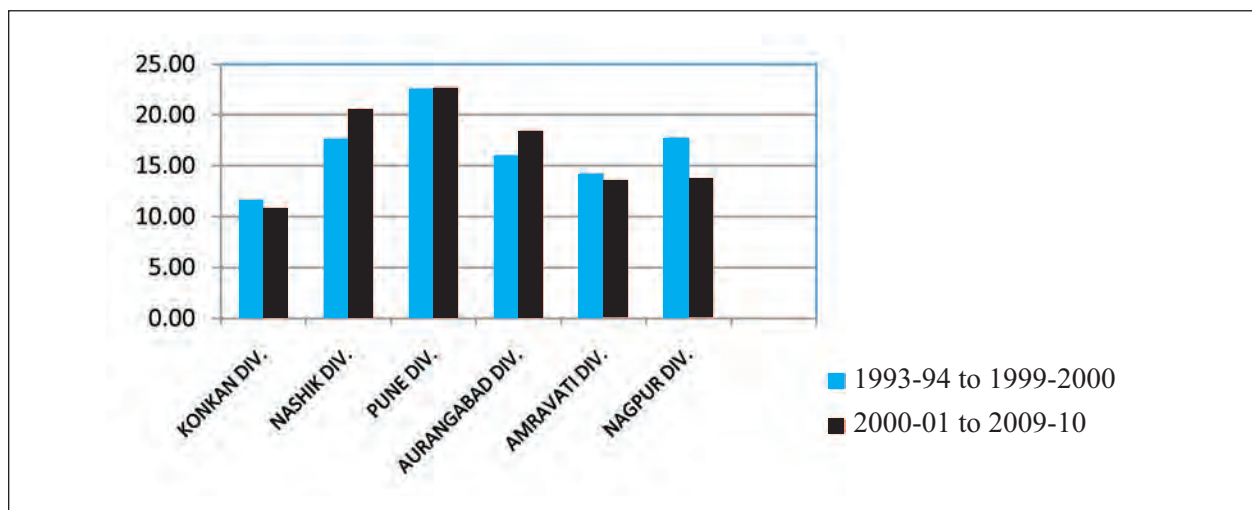
Konkan is noticed in the second sub-period. Among the lagging divisions, Aurangabad has shown some improvement in its contribution in the second sub-period while Amravati and Nagpur show a fairly sharp reduction. This does not augur well for these regions which have large dependence of workforce on agriculture as is seen in Table 3.23. (Amravati has 75% and Nagpur has 60% of their workforce as either agricultural workers or cultivators).

Table 3.23
Division wise Contribution to Primary Sector (%)

Division	1993-94 to 1999-2000	2000-01 to 2009-10
1	2	3
KONKAN	11.6	10.8
NASHIK	17.7	20.6
PUNE	22.6	22.7
AURANGABAD	16.1	18.5
AMRAVATI	14.3	13.6
NAGPUR	17.7	13.8
<i>Mumbai</i>	2.4	2.2
<i>KEM</i>	9.3	8.6
Region wise		
RoM	51.9	54.1
Marathwada	16.1	18.5
Vidarbha	32.0	27.4

Source : Constructed by Committee from DES data.

Figure 3.12
Division wise Per cent of Primary Sector SDP



Source : Constructed by Committee from DES data.

Table 3.24
Workforce Dependent on Agriculture

Division		Cultivators/ Total Workers	Agricultural Workers/ Total Workers	Total Workforce dependent on Agriculture/ Total Workers
1	2	3	4	5=(3+4)
KONKAN	RoM	18.90	10.26	29.16
NASHIK	RoM	36.02	30.69	66.72
PUNE	RoM	35.73	19.96	55.69
AURANGABAD	Marathwada	39.23	34.60	73.83
AMRAVATI	Vidarbha	26.24	49.27	75.51
NAGPUR	Vidarbha	24.62	34.91	59.53

Source: Census 2001

Both categories include main and marginal

Besides having a large share of workforce dependent on agriculture i.e. over 60% (Table 3.24) it is interesting to note that Nagpur division has gross irrigated area as per cent of gross sown area over 25%, which is the second highest in the state after Pune division (Table 3.25). When we juxtapose this with the fact that Nagpur division's contribution to primary sector GSDP has fallen from 17.7% to 13.8%. (Table 3.23), it *signals particularly poor performance of Nagpur division on the agricultural front.*

Region wise we see that RoM has the highest per cent of gross irrigated area to gross sown area and Vidarbha the lowest at 12.8%. However, it is also important to note that such a region wise analysis covers up the sharp variation between Amravati (5.9%) and Nagpur (25.7%).

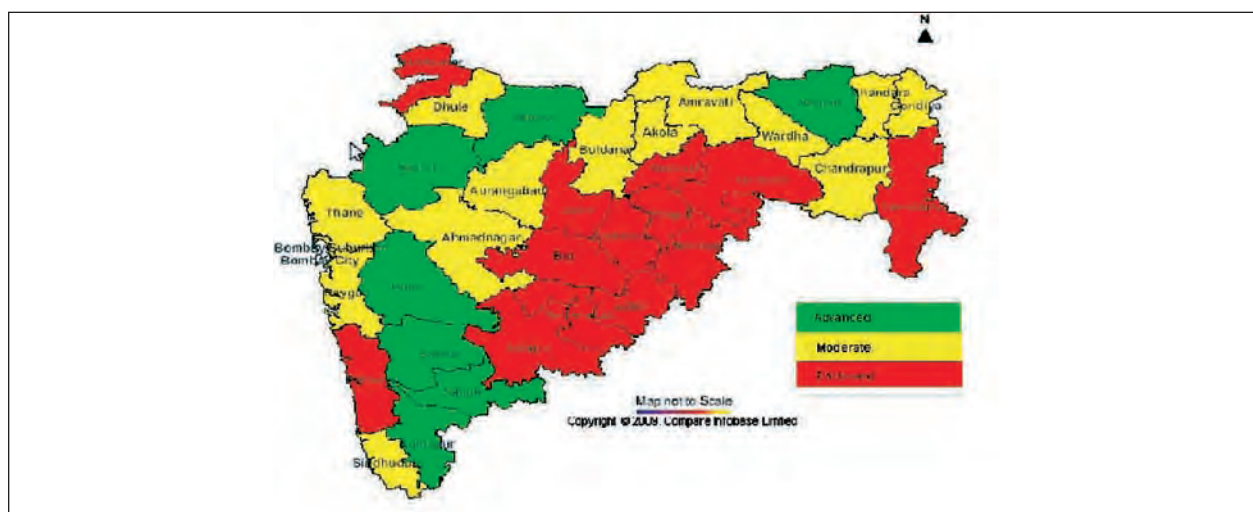
Table 3.25
Per cent of Gross Irrigated Area to Gross Sown Area (2008-09)

1	2
AURANGABAD	14.08
KONKAN	8.09
NASHIK	18.15
PUNE	27.02
AMRAVATI	5.90
NAGPUR	25.67
Region wise	
RoM	20.56
Marathwada	14.08
Vidarbha	12.82

Source: Constructed from DES data.

A District-wise agriculture development index has been computed by NABARD http://12thplan.gov.in/12fyp_mgr/suggestions/docs/9_District%20Agriculture%20Development%20Index.pdf. The comparative stage of agricultural development as presented by them is indicated in the following map (Figure 3.13).

Figure 3.13
Comparative Stage of Agricultural Development



Source: District Agriculture Development Index, NABARD

When considering the contribution to secondary sector, we see that the three divisions of Konkan, Pune and Nashik continue to be at the top while the three lagging divisions continue to lag behind. However, from among the advanced divisions Konkan (both Mumbai and Konkan Excluding Mumbai) shows a slippage while Nashik and Pune which contribute significantly lower than Konkan show an improvement in the second sub-period. From among the lagging divisions of Aurangabad, Amravati and Nagpur, the first two show marginal improvements while Nagpur shows a marginal slippage. *Thus while relative position of the divisions remain more or less unchanged in the second sub-period, Konkan at the top and Nagpur which is close to the bottom show slippages, while all other divisions show improvements.*

Region wise, RoM and Vidarbha both show marginal reduction in their shares while Marathwada shows some improvement. (See Table 3.26)

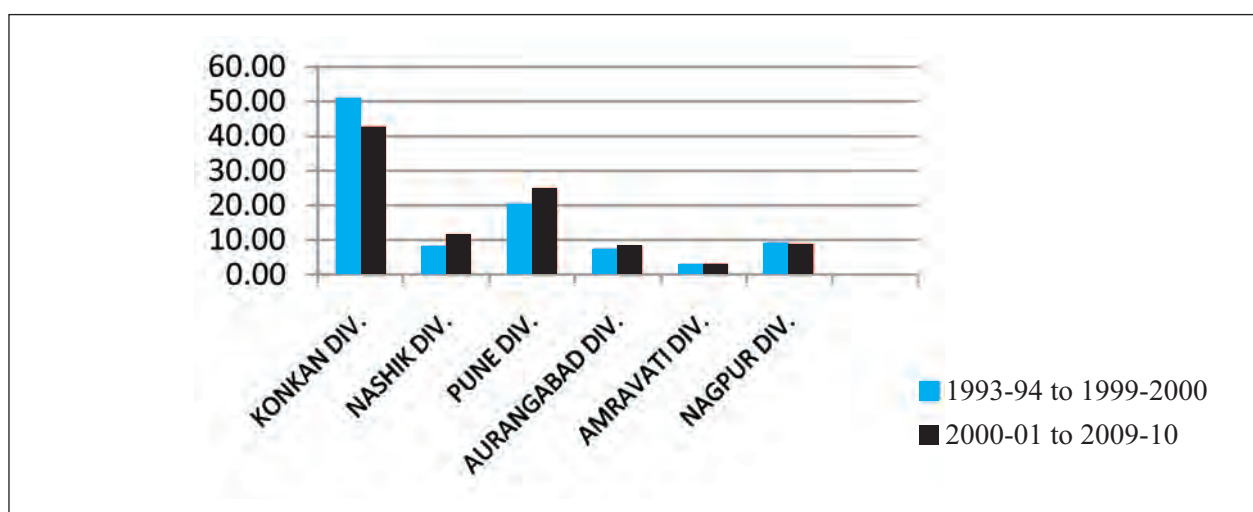
Table 3.26
Division wise Contribution to Secondary Sector (%)

Division	1993-94 to 1999-2000	2000-01 to 2009-10
1	2	3
KONKAN	51.1	42.9
NASHIK	8.5	11.6
PUNE	20.5	24.9

Division	1993-94 to 1999-2000	2000-01 to 2009-10
1	2	3
AURANGABAD	7.6	8.4
AMRAVATI	3.07	3.1
NAGPUR	9.22	9.1
<i>Mumbai</i>	25.85	20.7
<i>KEM</i>	25.29	22.2
Region-wise		
RoM	80.1	79.4
Marathwada	7.6	8.4
Vidarbha	12.3	12.2

Source : Constructed by Committee from DES data.

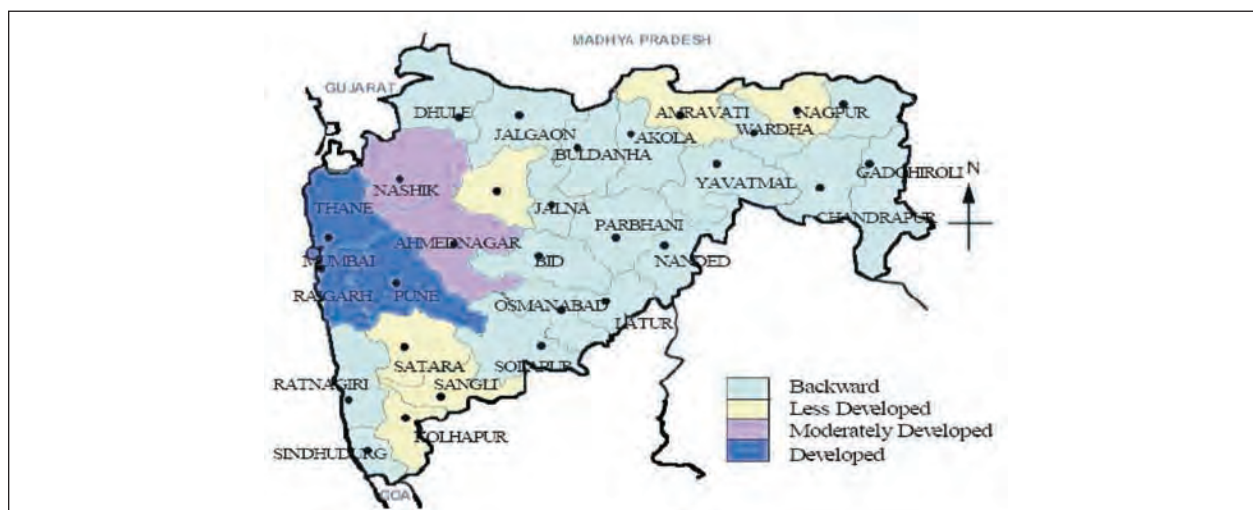
Figure 3.14
Division wise Per cent of Secondary Sector SDP



Source : Constructed by Committee from DES data.

As regards regional spread of industrialization, it has happened in and around Mumbai (see Industries Chapter). The districts of Pune, Thane and Raigad are the developed districts with a few less developed pockets. Nashik and Ahmednagar are moderately developed while Satara, Sangli, Kolhapur, Aurangabad, Amravati and Nagpur are less developed. The rest of Maharashtra is categorized as lagging (State of Environment Report, Government of Maharashtra, 2006-07, http://envis.maharashtra.gov.in/envis_data/pdf/soer/chapter1.pdf).

Figure 3.15
Regional Spread of Industrialization



Source : Constructed from DES data.

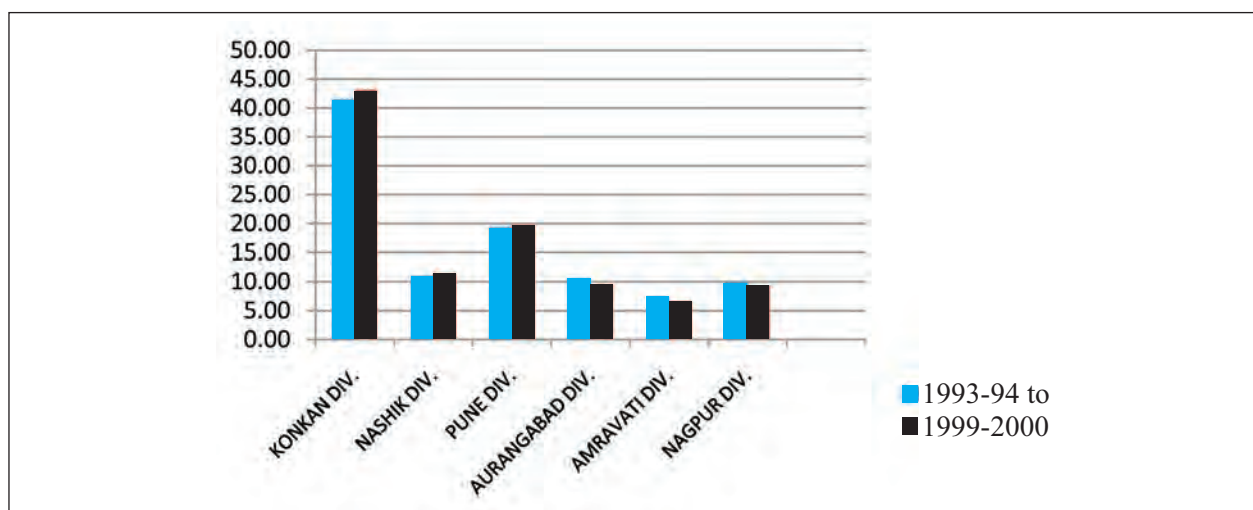
The contribution to services sector has picked up only for Konkan division which increased its share by 3 percentage points. The increase is noticed for both Mumbai and Konkan Excluding Mumbai. Nashik and Pune divisions show marginal improvements in the second sub-period while Aurangabad, Amravati and Nagpur show slippages. *Thus once again the lagging divisions seem to have performed even more poorly in the second sub-period.*

Table 3.27
Division wise Contribution to Services Sector (%)

Division	1993-94 to 1999-2000	2000-01 to 2009-10
1	2	3
KONKAN	41.6	44.4
NASHIK	11.1	11.1
PUNE	19.4	19.9
AURANGABAD	10.6	9.1
AMRAVATI	7.4	6.3
NAGPUR	9.9	9.1
<i>Mumbai</i>	25.5	26.8
<i>KEM</i>	16.1	17.5
Region-wise		
RoM	72.0	75.4
Marathwada	10.6	9.1
Vidarbha	17.4	15.5

Source : Constructed from DES data.

Figure 3.16
Division wise Per cent of Services Sector GSDP



Source : Constructed from DES data.

Thus, the overall picture that seems to emerge from our examination of the data at the division level for the two sub-periods is that as far as relative position of the divisions are concerned, be that in terms of contribution to overall GSDP or contributions to Primary, Secondary and Tertiary sectors, *Konkan, Pune and Nashik seem to form one group which is ahead of the other group of Amravati, Aurangabad and Nagpur. What is worse is that by and large the lagging divisions of Aurangabad, Amravati and Nagpur seem to be performing relatively even more poorly in the second sub-period.*

We may now compare the nature and composition of economic activity in these three regions.

Table 3.28

Sectoral Composition of Economy and of the Regions

**Income of Sector as a Percentage of Total Income of the Region for Maharashtra Minus Mumbai
 {GDDP Constant (2004-05) Prices}**

	1999-00	2002-03	2004-05	2007-08	2009-10
1	2	3	4	5	6
Primary Sector	18.05	16.96	14.65	14.23	11.08
Secondary Sector	29.94	27.47	29.11	32.43	30.90
Services Sector	52.01	55.58	56.24	53.34	58.01
Total	100	100	100	100	100

Source : Constructed by committee from DES data.

Table 3.29

Income of Sector as a Percentage of Total Income of the Region for RoM Minus Mumbai {GDDP Constant (2004-05) Prices}

	1999-00	2002-03	2004-05	2007-08	2009-10
1	2	3	4	5	6
Primary Sector	13.41	12.84	12.29	10.72	8.88
Secondary Sector	33.39	30.37	32.22	36.03	34.00
Services Sector	53.20	56.79	55.49	53.26	57.12
Total	100	100	100	100	100

Source : Constructed by Committee from DES data.

Table 3.30

Income of Sector as a Percentage of Total Income of the Region for Marathwada {GDDP Constant (2004-05) Prices}

	1999-00	2002-03	2004-05	2007-08	2009-10
1	2	3	4	5	6
Primary Sector	23.16	22.72	20.03	22.72	17.53
Secondary Sector	25.19	22.89	23.70	26.30	25.24
Services Sector	51.66	54.39	56.27	50.98	57.23
Total	100	100	100	100	100

Source : Constructed by Committee from DES data.

Table 3.31

Income of Sector as a Percentage of Total Income of the Region for Vidarbha {GDDP Constant (2004-05) Prices}

	1999-00	2002-03	2004-05	2007-08	2009-10
1	2	3	4	5	6
Primary Sector	29.52	26.87	19.15	20.69	14.87
Secondary Sector	21.95	20.77	22.12	24.19	23.46
Services Sector	48.53	52.36	58.73	55.12	61.67
Total	100	100	100	100	100

Source : constructed by Committee from DES data.

It is important to note that popular impression notwithstanding in all the three regions predominance of the primary sector has waned. In Marathwada and Vidarbha region primary sector accounts for approximately 18 and 15 per cent respectively. Expectedly, share is even lower in the RoM. In all three regions the share of secondary sector is either greater than 25 per cent or nearly approaching 25 per cent. Tertiary sector or service sector dominates the income generation pattern in all the three regions. These trends are consistent with usual experience of developing economies within the country as well as

across the countries. It is also well known fact that the sectoral composition of the employment follows similar sectoral distribution albeit much slowly. *All the three regions are on a similar track of economic evolution and at least at the broad sectoral levels, nature of economic growth and development expected to happen in the near future would be of similar nature.*

Relative predominance of manufacturing, construction and power generation in RoM is evidenced by the higher share of secondary sector. It should be observed that manufacturing activity is mostly disappearing from Mumbai and suburban regions. It has gradually shifted to Thane and Raigad districts. Pune and Nashik are other two regions of vibrant industrial activity. Hence the industrial advance in RoM as the major driver of growth is apparent in the broad sectoral composition data as well.

Growth of services sector deserves closer examination. Our review of the 'financial inclusion' indicated some degree of divergence in credit deposit ratio yet the inclusion in terms of 'availing of banking services' was not too skewed. This explains the rise of financial services across regions. In last decade the rise of mutual funds, insurance and other direct investment opportunities have increased in many smaller towns and cities. More importantly the trade, hotels and restaurant services have increased vigorously across all the regions. The share of the individual sectors will be rising if its rate of growth exceeds the rate of growth of other sectors. We, therefore, present the sectoral growth rates in Table no. 3.32.

Table 3.32
Annualized Growth Rate in Sectoral GDDP at Constant (2004-05) Prices for Each Region (%)
(2000-01 to 2011-12)

	RoM Minus Mumbai	Marathwada	Vidarbha	Maharashtra Minus Mumbai
1	2	3	4	5
Primary Sector	4.73	6.38	0.39	3.74
Secondary Sector	9.65	9.65	8.87	9.53
Services Sector	9.05	9.09	9.55	9.16
All Sectors	8.75	8.67	7.34	8.46

Source : Constructed from DES data.

The table above reveals remarkable trends. *The growth rates across regions are in fact fairly close to each other in almost all the sectors except primary sector in Vidarbha (of course there is the base factor).* The growth of primary sector in Vidarbha is as low as 0.39 per cent compared to 6.38 per cent in Marathwada and 4.73 per cent in RoM. This deserves to be examined more closely. It is well known that agriculture accounts for the largest share within primary sector. Hence such a divergence of growth must have primarily originated within agriculture itself. We may thus look at the growth rate of agriculture sector in the last decade. In Table 3.33 we present the Year-on-year and trend (i.e. covering entire period) growth rate of agriculture.

Table 3.33
Year-on Year and Trend CAGR in Agricultural Income in Different Regions (%)

YoY Growth in GDDP - Agriculture & Allied Activity - At Constant (2004-05) Price				
Year	Maharashtra Minus Mumbai	RoM Minus Mumbai	Marathwada	Vidarbha
1	2	3	4	5
1999-00	-	-	-	-
2000-01	-18.79	-13.50	-16.39	-28.78
2001-02	22.56	19.38	15.98	32.97
2002-03	1.30	1.50	8.15	-2.75
2003-04	7.93	12.04	-0.71	5.36
2004-05	-7.53	-0.24	7.66	-30.62
2005-06	9.50	3.54	15.46	21.43
2006-07	14.28	12.54	16.64	16.58
2007-08	13.96	7.93	22.94	20.81
2008-09	-15.80	-5.61	-25.86	-28.85
2009-10	1.10	-0.96	10.28	-1.19
2010-11	19.05	17.26	26.98	16.31
2011-12	4.52	9.07	-1.29	-2.18
Trend (CAGR)	4.24	5.14	6.87	0.34

Source : Based on DES data

The table above indicates that performance of agriculture in Vidarbha is remarkably lower and depressing when compared to other regions. The trend rate of growth in Vidarbha is as low as 0.34 which is statistically insignificant (that is it is statistically same as zero). Not only that the growth is stagnant in the sense of trend but more importantly year on year variation are markedly higher in frequency as well as in size. Out of ten years six years exhibit negative growth rate. The size and frequency of such year on year growth fluctuation is relatively mild in Marathwada as well as RoM. Consequently both the regions show greater resilience and positive trend rate of growth in these regions. Thus complete stagnancy (as indicated by zero rate of growth) and wild fluctuations in agricultural income is the major negative feature of growth process in Vidarbha. This shock has negatively impacted the growth process and performance of Vidarbha. Consequently the overall rate of growth of Vidarbha in current as well constant prices is below the rate of growth of Marathwada and RoM.

However, other sectors did not suffer from such adverse negative impacts. In manufacturing sector progress seems robust (relatively to agriculture and which is also partly due to the initial low 'base level' in Marathwada and Vidarbha). These are summarized in Annex 3.10.

It may be noted that Hingoli and Nandurbar are the two outliers and have been excluded in estimating the CAGR. The growth rates of RoM Marathwada and Vidarbha are 10.1, 8.2 and 9.1 respectively.

Even more robust growth is found in the important service sector of **Trade, Hotel & Restaurant**. These are presented in the table 3.34. The CAGR in this sector is highest in Vidarbha, followed by Marathwada. The rate of growth in RoM appears lower due to its larger base over which the rate of growth is being measured.

Table 3.34
Trade, Hotel and Restaurant at Constant (2004-05) Prices (%)

Year	RoM Minus Mumbai	Marathwada	Vidarbha	Maharashtra Minus Mumbai
1	2	3	4	5
1999-00	-	-	-	-
2000-01	3.21	0.86	-0.10	2.40
2001-02	3.17	5.97	6.70	4.05
2002-03	12.03	10.75	11.15	11.74
2003-04	6.74	1.18	7.57	6.24
2004-05	-1.28	42.96	54.90	12.75
2005-06	8.20	8.09	8.14	8.17
2006-07	15.13	15.09	14.97	15.08
2007-08	8.16	8.05	8.03	8.12
2008-09	-1.14	-1.64	3.58	-0.15
2009-10	17.14	17.50	11.69	15.92
2010-11	6.63	6.51	6.48	6.58
2011-12	2.93	2.81	2.83	2.89
CAGR	7.04	10.81	12.62	8.56

Source: Constructed from DES Data

The sectoral rates of growth in current prices are summarized below in the table below.

Table 3.35
Annualized Growth Rate in Sectoral GDDP at Current Prices for Each Region

	RoM Minus Mumbai	Marathwada	Vidarbha	Maharashtra Minus Mumbai
1	2	3	4	5
Primary Sector	13.47	15.70	8.10	12.38
Secondary Sector	15.60	15.59	14.67	15.46
Services Sector	14.03	14.75	14.87	14.28
All Sectors	14.46	15.19	13.26	14.31

Source: Constructed by Committee

In the Table no 3.35 above, we have presented the sectoral and overall growth rates of each region. As earlier remarked the except for the rate of growth in primary sector of Vidarbha, the rapidity of economic expansion is fairly close to each other. Extreme stagnancy in agriculture has pulled down the overall growth performance of Vidarbha. On the other hand, Marathwada region is expanding at the highest overall rate of growth.

3.4 Convergence:

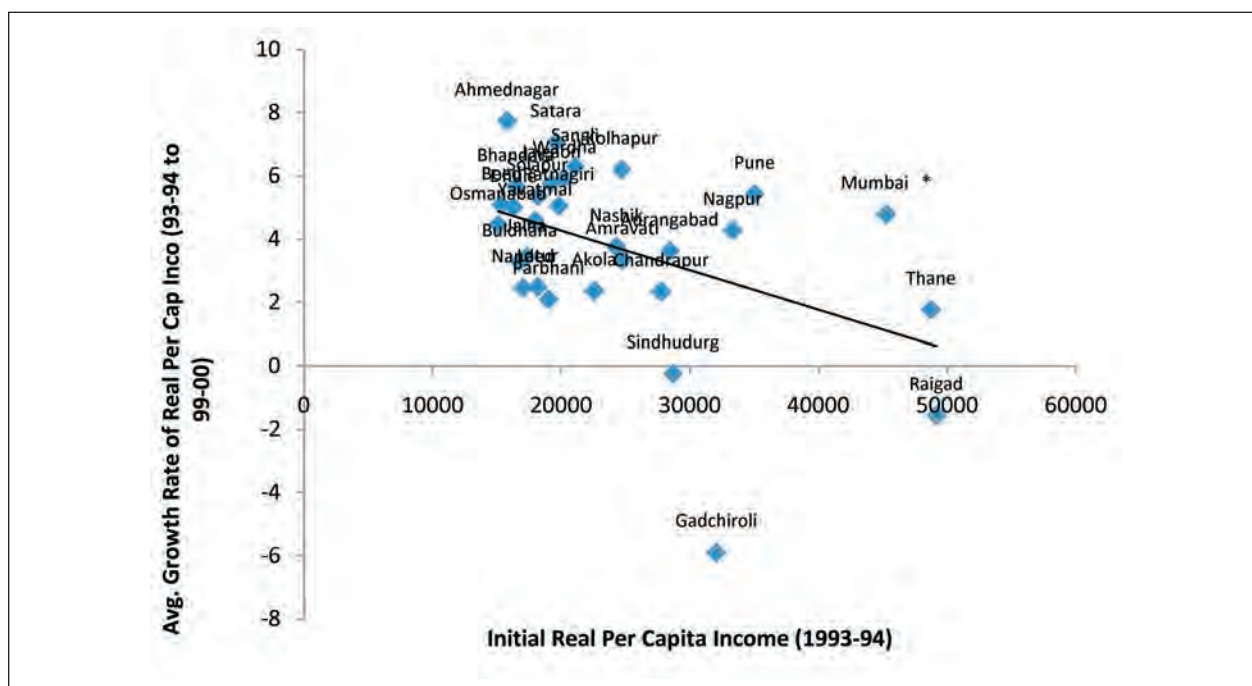
We now turn to reporting an interesting exercise, viz., that of testing convergence in regional growth rates. We source this part on the study commissioned by the committee to Prof Mala Lalvani. In the

context of time series data for a region, absolute convergence measures the rate at which the region approaches its potential level of income. In the context of cross-sectional data, the relevant question is whether poorer (lagging) regions are catching up with richer regions. The underlying expectation that poorer regions will grow faster than richer regions (enabling them to catch up) relies heavily on the assumption that the only difference across regions lies in their initial levels of capital. This is known as *absolute convergence* and posits the same steady state level of income for rich and poor regions. If the regions have different technological or behavioural parameters then *conditional convergence needs to be estimated*, assuming that regions will differ in these parameters leading to differences in their steady state incomes.

To begin with we attempt to get an intuitive idea of change in inter-district variation with a plot of the initial per capita income against the growth rate separately for the two sub-periods. For the first sub-period the initial real per capita income (1993-94) is plotted against the growth rate for the period 1993-94 to 1999-00 (Figure 3.17). Similarly, for the second sub-period we plotted the initial income (1999-00) against the growth rate for the period 2000-01 to 2009-10 (Figure 3.18). As may be easily seen, we obtain a downward sloping trend line for the first sub-period indicating that districts with higher per capita incomes in the initial period exhibited lower growth rate. Intuitively this would support convergence. For the second sub-period (2000-01 to 2009-10) we obtained an upward sloping trend line suggesting divergence.

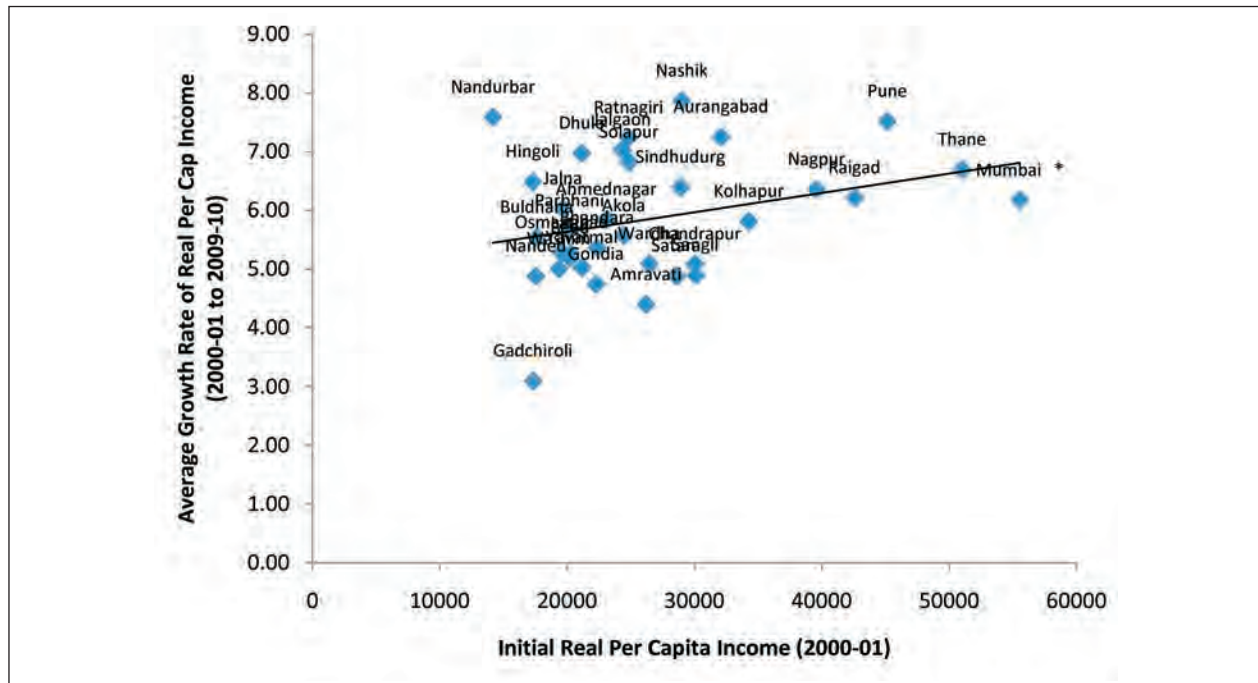
Figure 3.17

Initial Real Per Capita Income and Growth Rate of Per Capita Income (1993-1994 to 1999-2000)



Source : Constructed from DES data by the Committee

Figure 3.18
Initial Real Per Capita Income and Growth Rate of Per Capita Income (2000-01 to 2009-10)



Source : Constructed from DES data by the Committee

A formal test of absolute as well as conditional convergence/ divergence was performed. We also considered the data in different sub-groups i.e. All districts; Region-wise and Division-wise. *When considering all districts as well as when clubbed regionally together we find evidence of convergence (both absolute and conditional) in the first sub-period i.e. latter half of the 90s and divergence in the second sub-period.* This vindicates the first impression that we got from our downward sloping graph for the first sub-period and the upward sloping graph in the second sub-period. This reversal may be seen as a shock that call for rectification (which we do in our approach by following a strategy of growth acceleration of lagging regions).

3.5 Human Development Index

Let us now turn to the performance in terms of Human Development Index of the districts and regions reported in the tables below. A cursory glance at Annex 3.11 shows that the HDI across districts and regions have uniformly increased over time. This needs to be juxtaposed against the fact (reported earlier) that there has been a divergence in the per capita incomes across regions. ***This shows that despite this negative economic performance in relative terms it is not as if nothing has changed or indeed that things have worsened over all fronts.*** The HDI performance shows (taking into account the components of HDI) that Government intervention in terms of CSSs, notably, SSA, NRHM, must have yielded benefit to all the regions. We of course recognize that the CSS interventions through CSSs are only temporary palliatives and the true long term livelihood empowerment can only come through growth and employment.

This is further underlined when one realizes (Tables 3.36-3.38 below) that the HDI have increased by 14.4% for Marathwada, 14.3% for Vidarbha and 12.1% for RoM hence showing that *the increase in HDI has been more for the lagging regions*. Also, the district level variation as seen by the CVs shows it has reduced in all the three regions, it being lowest for Vidarbha, then Marathwada and lastly RoM showing that there is greater clustering and hence less intra regional issues as far as HDI is concerned.

Table 3.36
HDI - Marathwada

MARATHWADA HDI 01-11		
1	2	3
MEAN	0.604	0.691
STDEV	0.033	0.028
CV	0.055	0.041

Table 3.37
HDI - Vidarbha

VIDARBHA HDI 01-11		
1	2	3
MEAN	0.630	0.720
STDEV	0.031	0.015
CV	0.049	0.021

Table 3.38
HDI - RoM

ROM HDI 01-11		
1	2	3
MEAN	0.687	0.770
STDDEV	0.057	0.052
CV	0.083	0.068

3.6 Concluding Remarks

To summarize, in this chapter we have traced what happened, after submission of I & B Committee Report, over the last two decades, in terms of the trends in overall growth rate as well as regional and sectoral growth rates. We have also looked at the trends in per capita terms and at the district level. We can see while the trends across the regions are not too dissimilar in terms of poverty removal within regions, there are emerging sub-regional growth differentials.

In this period, however, there has been worsening of inter-regional per capita income particularly in last decade with the relative proportions worsening to 0.6:0.76:1.00 from 0.66:0.82:1.00 at the turn of the century for Marathwada, Vidarbha and RoM regions. This meant that the positive trend observed in the first sub-period got reversed in the second half. This trend of worsening should be reversed. Present divergence in growth, if allowed to continue in future, the inequality would worsen even further. Another troubling aspect is that the tribal areas continued to be at the lower scale of the growth ladder.

Here, two key questions emerge and these are:

1. Whether this ratio of per capita income across regions reflected a huge imbalance? and
2. Whether the lagging regions can catch up in future in terms of per capita incomes and reduce this imbalance?

If one looks at experience of other large federations (covering more than 50% world population and more than 1/3rd of world PPP-GDP), we find that inter-state inequalities in these federations are much higher where the ratio of per capita income between the richest and poorest varies between 12 and 20 for large emerging economies such as China, Brazil, Indonesia while even for mature federations such as Canada and USA, it is between 1.5 and 2.5. Even in our own country the ratio of highest and lowest inter-state per capita income is 8.4. Then the question is why there is so much angst in Maharashtra for relatively lower levels of regional disparities especially when a State-wide convergence in HDI is also emerging. This may perhaps be due to the following reasons:

During the last decade, the Economy of Maharashtra experienced two major economic shocks and one major shift in distribution of political power. One positive shock came from the new growth possibilities from IT-driven services sector as well as from the advanced manufacturing sectors such as Auto, Pharma, Electronics, etc. where the region that benefited to a much greater extent was RoM compared to Marathwada and Vidarbha. During the same time period, there was one negative shock particularly to the Vidarbha agriculture as this sector experienced near-stagnation accompanied by extreme volatility. In this period although Marathwada grew more rapidly, its per capita growth rate was lower due to the fact that population growth rate was highest in Marathwada. Two economic shocks with high population growth in Marathwada meant the reversal of the earlier trend and increased disparities amongst regions. This reversal heightened the discontent particularly because of the tragic incidence of growing number of farmers' suicides in Vidarbha and increased violence in tribal areas. A sense of alienation perhaps got further accentuated because of the shift in the distribution of political power that took place in the composition of Maharashtra Cabinet. Coalition government led to a skew pattern in the shares of more powerful departments or ministries amongst these regions and thus creating a sense of “disempowerment” particularly in Vidarbha.

Given our State's commitment to the letter and spirit of Nagpur Pact, the present state of affairs needs to be immediately corrected. The Committee is of the view that this can be achieved through growth acceleration in lagging regions, policy reforms and more equitable sharing of resources and political power. The Committee is of the view that the present regional disparities can be reduced by 1/3rd by the 14th Plan period, and for the tribal areas, it can be reduced even by greater extent through implementation of the proposals contained in this Report.



CHAPTER 4

Towards Balanced Regional Development: A Multidimensional Policy Approach

4.0 Introduction

In this chapter, we propose to elaborate the approach of this committee. Our approach has been shaped by several key elements: (i) Terms of reference of our committee (ii) Critical appraisal of earlier policies and policy approaches as well as insights from modern development literature (iii) Views of the Stakeholders (iv) Need for special emphasis and efforts to address the issues of tribal and drought prone areas (v) Emerging intra-regional inequalities (vi) Structural changes in the economy and the new political economy (vii) Impact of globalization (viii) Critical institutional and governance related dimensions (ix) Concern for greater democratic decentralization (x) Insights from experiences of other states in India (xi) Likely 'resource envelope' (xii) Evolving dynamic comparative advantage of different regions (xiii) Policy reforms imperatives on the part of State Government and Government of India (xiv) Recognition of the growing role of the market driven and incentive compatible mechanisms in the changed world and (xv) A shared vision of achieving a more equitable and prosperous Maharashtra.

4.01 Thus, our approach is as indicated above a multidimensional one and does not focus only on resource allocation. It follows two tracks, one of equalization of access to public goods and two, that of promotion of growth acceleration simultaneously. It is based on expert knowledge and empirical analysis as it derives inputs from commissioned studies. Governance and policy reforms – as a crucial soft part of supportive infrastructure – form the core of our approach. We focus on outcomes in computing/estimating the development deficit (rather than focusing only on expenditure inputs). In designing our proposals, we have been mindful of the resources availability, incentive compatibility and the political economy of Maharashtra.

4.02 Committee is of the view that achieving balanced regional development primarily means progressive reduction in economic disparities as reflected in gap in per capita incomes of the regions. Such reduction in disparity is possible in two essential ways: Equalization of access 'in public goods' and accelerating the economic growth in the regions in tune with their respective dynamic comparative advantage. As we have already observed in the Chapter 3 ('Trends and Patterns in growth') that all regions have experienced growth in the last decade and will continue to grow in the future. In order to achieve balanced regional development the lagging regions should grow more rapidly. It may be pointed out that more rapid growth in the lagging regions does not warrant holding back or slowing down the growth process in the relatively advanced region. On the contrary the improved infrastructural connectivity across regions and further closer integration of their markets would elicit complementary positive feedback growth effects across regions.

Our understanding of regional balance thus comprises of two strands (each with multiple components as elaborated in this chapter). Firstly, we want to universally equalize access to basic public goods (identified later) and equitably allocate public resources and bring about policy institutional and governance reforms that would crowd in private investment resulting in accelerated growth in lagging regions by leveraging their comparative dynamic advantage. The question of regional imbalance in Maharashtra is complex one and it has multiple dimensions. Such a complex problem requires a strategic and an analytical approach. Our task has been very challenging. Towards this, our effort has been to tackle this complex issue, without ever losing the realism necessary for policy making in a democratic polity. Our policy approach aims at devising realistic strategies to promote balanced regional growth on a sustainable basis.

4.02.1 The task assigned to us as per the terms of reference of the committee should be appreciated in a historical perspective. In years of 1999 to 2010, Governor of Maharashtra has been actively involved in working of the Development Boards constituted as per the provisions of Article 371(2) of the Indian constitution. This institutional arrangement has its own features and limitations. Many different features and issues in regional imbalance problem have surfaced in the last decade. In spite of the special institutional arrangement of Regional Development Boards and financial outlay provisions, the issue of regional imbalance has persisted. It has continued to surface time and again with bitter political controversies such as allegation of diversion of funds from one region to another, as well as in deliberate harmful neglect and discriminatory treatment in working of development policies. More importantly, it has resulted in political frustration as well as anger and 'trust deficit' about the government's intentions (for details, refer to the Chapter 2 on 'Stakeholders' Views'). Given the unsatisfactory success of the allocation mechanisms and its efficacy in eliminating the regional disparities, the terms of reference warrant us to re-examine the approach critically and afresh. Our terms of reference mention the Governor's directives dated 27/5/2009 and 10/03/2010. We are required to explore the strategy to ensure development equalization. The approach, so far, to balanced regional development has mostly been informed from the work of two earlier committees. These committees essentially focused on public expenditures on inputs with a sector-wise focus and had a single (uni)-dimensional manner. In our approach and report, we felt that the earlier approach was somewhat limited and so the underlying relevant questions are *inter alias* scrutinized in their different dimensions and aspects.

4.02.2 Committee was guided by vision and spirit of Nagpur pact and the following and sagacious commitment of Shri. Yashwantarao Chavan, the first Chief Minister of Maharashtra. In his address to assembly in 1960, he has stated: ***“I wish to assure the people of Bombay City that it is the firm intention of the future Government of Maharashtra to preserve the cosmopolitan character of the city and to pay special attention to its developmental needs.***

Likewise, I wish to assure the people of Vidarbha that they need to have no apprehension that their legitimate interests will not be protected; on the other hand,

they will be zealously guarded and will be treated as a sacred trust of the future Maharashtra Government. The terms of what is known as the Nagpur Pact will be honored and wherever possible something more will be done.

Perhaps the house is not aware that the Nagpur Pact applies as much to Marathwada as to Vidarbha and I would like to state that the terms of the Nagpur Pact so far as they relate to Maharashtra will equally be fulfilled. To reassure our brothers in these regions, I have placed on the Table of the House a statement of policy regarding Bombay City, Vidarbha and Marathwada, which I have just read out to you. I have taken the opportunity to stress the need for the planned development of the Konkan districts and scarcity area of Maharashtra as well.

In this connection, I would like to draw the attention of the House to Article 371 of the Constitution, which contains special provisions for Bombay and other States. That Article envisages separate Development Boards, equitable allocation of funds for developmental expenditure, equitable arrangements for technical education and vocational training and adequate opportunities for employment in State Services. The protection afforded by this Article will continue in the residual State of Bombay, that is Maharashtra.”

- 4.02.3 In order to understand fully the question of regional imbalance, we have looked at international experience and consulted a rich body of literature as well as various country experiences to appreciate the nature of problem and range of policy solutions that have been suggested as well as attempted. We also wanted more detailed and nuanced analysis of the conditions in Maharashtra. We commissioned a number of studies of different aspects of regional imbalance. For these studies, we were assisted by leading scholars from the universities and research institutions. Studies are listed in the Chapter 1. Within our committee, different subgroups were formed to study in depth a specific sector or region. These subgroups had many invited members who were the experts or scholars from the relevant fields. Essentially, our approach has been built upon the inputs from stakeholders' concerns, expert knowledge and researched advice.
- 4.02.4 More importantly, Committee decided to visit different districts of regions. Through public notice and invitations, we met all important sections of stakeholders and listened to their assessments, grievances and policy suggestions. During these visits, we received an overwhelming response and large number of submissions in all the regions. We learned a lot from these interactions. The nature of political restlessness, sense of desperation and anger that engulfs the issue of regional imbalance was vividly experienced during these public interactions. Various submissions made to us highlighted the extreme divergence of the economic and socio-political conditions and also the *inherent inadequacy of 'one size fits all'* approach. We have summarized important pleas and submissions and our 'learning' thereof in the previous chapter.
- 4.02.5 Our deliberations with the experts, scholars, stakeholders and administrators, more importantly, the elected public representatives strongly suggested the need to have

conscious economic strategy to deal with regional imbalance. Consequently, the Committee is acutely aware that there are many factors: economic, socio-cultural, geographical, institutional related to quality of governance and leadership that exercise strong influence on regional disparity.

- 4.02.6** The nature of economic and social development experienced in each region has its definitive historical background. The three regions that were merged to form the Marathi speaking state of Maharashtra had very different social-political histories. Western Maharashtra had a longer legacy of progressive social movements, earlier rise and spread of modern liberal education. Earlier social hierarchy was challenged and a new political leadership representing such social renaissance was already in the forefront. There was greater political cohesion and consensus among different communities in seeking political representation. Such development was initially of lesser intensity in Marathwada and parts of Vidarbha and these divergences may have exercised some impact on the political process and administrative systems as well.
- 4.02.7** Social composition of these regions as reflected in the political representation and mobilization has also been different. From 1995 onwards, electoral politics has been shaped by coalition of different parties. Nature of electoral support enjoyed by individual parties across regions has affected the ability of coalitions to articulate regional voice and representation adequately. Regional political representation through prism of coalition has possibly enhanced the sense of neglect and political frustration.
- 4.02.8** In the light of the above, we have adopted a multi-dimensional approach that takes in its wake growth and equity aspirations of regions, greater role for governance and decentralization, need for institutional capacity building and adoption of policy reforms anchored in fiscal realism. ***We believe that socio-political and economic empowerment is crucial and can be achieved through our recommendations related to education and governance (in particular decentralization).*** Our approach emphasizes equalization of access to key public goods on one hand and the growth acceleration strategy for the lagging regions with more equitable resource allocation and focused governance on the other. We believe that, whereas growth acceleration will have element of centralization, employment augmenting MSMEs can be encouraged through decentralized efforts dovetailed with infusion of social entrepreneurship. However, ***we also recognize that there are no quick fixes here and concerted efforts by social and political leadership along with human resources of greater skill is the only way forward.*** Such an approach accompanied by reforms of government policies will lead to fuller and improved utilization of the growth potential of the regions.

4.1 Policies Towards Regional Imbalance: A Retrospective Summary

- 4.1.1** Level of development, standards of living and livelihood and the nature of economic and social vulnerabilities are rarely similar across regions. However, there are epochs of history when the inequality and disparity in these dimensions are too large. Moreover, they are perceived to be

much more than the levels which are socially and politically acceptable. In such conditions, differences in development, income-levels and economic-cum- social opportunities emerge as the question of regional imbalance. In some instances, the backwardness has easy identifiable geographic characteristics (e.g. chronically drought prone areas, Tribal areas, Hill areas, chronically flood affected areas, coastal areas affected by salinity etc.). Vidarbha and Marathwada became the parts of 'Maharashtra' as result of linguistic reorganization of states. Relative backwardness of these two regions was well recognized at the time of the reorganization. Moreover, maintenance of certain degree of non-discriminatory parity in development process and opportunities across regions has been a corner stone of the Nagpur agreement. Thus, it becomes necessary to define the appropriate indices that would meaningfully capture the extent development disparity in symptomatic as well as diagnostic sense. The regions, as defined by Nagpur agreement, are geographically and historically contiguous namely: Vidarbha, Marathwada and the remaining parts of Maharashtra; usually referred to as 'Rest of Maharashtra (RoM)'. However, there is a considerable variability within these regions. All of them have number of talukas which are almost permanently *drought prone regions*. Similarly, RoM and Vidarbha have several predominantly *tribal* talukas. Both of these represent areas that are substantially backward. We have included them as the 'virtual or imagined regions', where their geographic boundaries are not crisp and well defined, but they are important enough to warrant us to specially look at them (in some sense, thus extending the interpretation of our Terms of Reference).

4.1.2 Development disparities and divergences have several dimensions and expressions. Hence, their description and measurement needs to be made by multiple factors or outcome variables. Many scholars and expert committees have made efforts to construct combination of suitable 'multifactor indicator' which would aptly summarize the similarities and dissimilarities between developed and undeveloped regions. For example, Pande Committee (1968) Chakravarty Committee (1971), The National Committee on Development of Backward Areas (1981) or more recently 'Inter-Ministry Task Group on Redressing Growing Regional Imbalances' (Planning Commission, 2005) have employed indicator-based methodology. Identification of areas as 'backward' has not been our principal task. For our purpose, 'Regions' and 'Zones' of backwardness in Maharashtra are already known and defined. Hence, we have considered the indicators of backwardness only in the context of design of the strategy and indicative resource allocation.

4.1.3 In Maharashtra, FFC (or **Dandekar Committee - 1984**) assessed the disparities in development and backlog of districts lagging behind in terms of 'physical achievements' of government's development effort. Having done this, the Committee presented estimates of financial cost of making up the 'backlog'. Such backlog in several physical items of the several sectors was estimated. After assessing the backlog sector by sector the Committee aggregated the backlog of each district and proceeded to examine how the process of removing the backlog may be initiated. We may add here that, the Dandekar Committee also critically pointed out the substantive non-implementation of the Nagpur pact in letter and spirit.

The **Indicators and Backlog Committee** (1995) followed the procedure given below:

- (i) Indicators are limited to sectors in which public expenditure is undertaken.
- (ii) District is selected as the unit of analysis.
- (iii) Distance between State average and district average is used for estimating physical backlog in a sector. The districts below the State sectoral average are considered for removal of backlog.
- (iv) After estimating sectoral physical backlog of each district, they are converted into financial backlog by using unit costs at current prices.
- (v) To measure 'overall level of development', the Committee felt it necessary to quantify with the help of some composite index of development.

This Committee tracked the expenditure allocation sector by sector for each region and compared it with recommendations of the Dandekar Committee.

The **Indicator and Backlog Committee (I&BC)** examined indicators for each sector and a few sub-sectors under some of them were chosen to suit the purpose of measurement of relative levels of development. Measurement of relative levels has been done with reference to the average achievement levels of the State as a whole. Shortfall of any district from the State average is defined as backlog of that district in that sector or sub-sector. With a view to aggregation of backlogs for different sectors and to facilitate presentation for each district, division or region, the committee estimated the cost of removal of the physical backlog at current prices. Backlog costs include capital costs and recurring and non-recurring expenditure.

The Committee points out that the State average used for comparison of relative levels is a notional average and not a static figure. It goes up because of the normal growth process in all districts and the process of removal of backlog of below average districts. *The process of backlog removal has, therefore, to be construed only as a part of the effort for total development of backward districts.*

4.2 FFC and I&B Committee: A Brief Review

As pointed out earlier, there are several reports of the previous committees as well as individual research studies. The literature on these issues is very rich and diverse. We present here a selective summary of those studies, which in our view, provide a significant legacy of the thought process and policy formulation. Some of the earlier recommendations were not always incorporated in the operative policy. Nonetheless, they afford some significant suggestions and ideas that deserve to be seriously considered and reflected. Two major committees that shaped much of the policy ideas and perspective of regional imbalance are **Fact Finding Committee (FFC)** (1983) and **Indicators and Backlog Committee** (1997). There are some strong similarities in their approach. One major similarity lies in procedure of calculating the financial expenditures necessary to equalize the physical indicator accomplishment. This procedure has become a settled vocabulary of measuring backwardness as well as the fiscal instrument of removal of backwardness. Given the nature of clench and seize, this mode of thinking has exercised on public perception; we would deal with it in the following section separately.

4.2.1 The FFC or Dandekar Committee (1983) has made recommendations within the present

framework of Planning and Development in the State of which District Planning is an integral part. The Committee suggested that the approved outlay on schemes examined by them and hence, relevant to removal of specific backlog, should be constituted into what may be called the 'State Pool for removal of specific backlog'. The Committee clarified that the concern of the committee was only with its allocation between districts. They suggested 15 per cent of the State Pool for (a) completing certain on-going works/projects not relevant from the point of view of the backlog and (b) meeting the needs of natural growth. The amount reserved for (b) could be distributed among all districts in accordance with population alone. The remaining 85 per cent, it was suggested, would be available for removal of specific backlog and was to be allocated scheme by scheme to all districts with a backlog in proportion to their backlog. Thus, the scheme suggested by the committee required (a) identification of approved outlay for specific relevant sectors, sub-sectors, schemes, programs in the annual plan each year (b) reserving 15% of the outlays for completion of on-going work and for meeting the needs of natural growth and (c) allocating the balance 85% sector by sector to all districts with a backlog in proportion to the backlog measured from the state average.

- 4.2.2** The Committee proposed to initiate not a 'programme' for removing a given backlog, but a continuing process of reducing disparities in development i.e. an “*alternative strategy of development by lifting the bottom rather than pulling the top*”. FFC Committee believed that the continuing process of reducing disparities in development as proposed by the Committee would ensure that existing disparities would not increase and if new disparities arose they would not go unnoticed.

- 4.2.2.1** Some of the long term measures which the committee suggested to prevent recurrence of regional imbalance are the following:

Industrial Development: The committee was of the view that for the Package scheme of incentives to be effective in dispersing industry, it must take into account the factor of distance and compensate sufficiently the areas lying further away.

Agriculture: Research attention should be diverted to the problem of irrigated cropping in Vidarbha, particularly in the manner and pattern of water use, in view of the heavy black cotton soil in many of the districts there. The desired benefits of increased investment in irrigation depend on sound technology of water use and proper crop pattern, which have to be experimented and established early.

Irrigation: The Committee considered irrigation potential as percent of net sown area in standard Rabi equivalent hectares as the indicator of development. The Committee's recommendations in case of irrigation sector are two-fold:

- (a) Reduce the disparities on the basis of indicators and backlog estimates provided by the Committee and
- (b) Improve the measure of irrigation development in different regions/districts/talukas in terms of quantum of water and not just irrigated area.

Also, in case of irrigation potential, the Committee spoke of the significance of doing

the analysis separately for *drought prone areas* and also of the significance of *taluka level analysis* as intra-district disparities were very high.

- 4.2.2.2 Co-operation:** The state government should subscribe to share capital of spinning mills in the proportion 1:9. Also, it was represented to the Committee that sugar co-operatives provided a solid base for agricultural and rural development in Western Maharashtra and that cooperative processing of cotton and oilseeds can provide a similar base for development in Vidarbha and Marathwada. The Committee was sympathetic to the view that the state government could provide the same kind of strong administrative, financial and political support to cotton and oilseeds as it had given to sugarcane.
- 4.2.2.3 Representation in Services:** The Committee was of the view that accelerated development in the districts lagging behind will require strengthening of their administration in specific departments and also in the general administration. The Committee thus recommended that the present staff strength in various departments in different districts be immediately reviewed and strengthened wherever necessary.
- 4.2.2.4 Statutory Watch-Dog Authority:** The Committee recommended that a statutory watch-dog authority be established to oversee the policy, programme and process of reducing regional disparities in development. The committee suggested a single person, non-political, quasi-judicial authority for the whole state. They also proposed that this person should be appointed by the government in consultation with leader of the opposition for a five year period. This person would then prepare a report for the State Government each year, which the state government would place before the Legislature.
- 4.2.2.5 Development Boards:** Committee also examined the proposal to appointment of Statutory Board under Article 371(2). Majority of the members of the committee did not favor this option. However, honorable member, Shri. B. A. Kulkarni submitted a dissent note and argued in favor of the establishment of development board. Similarly, Prof. S. A. Deshpande and Shri S. A. Dave submitted supplementary note in favour of establishment of development boards.
- 4.2.2.6 Other Dissent notes:** Prof. V. V. Borkar, yet another member of the committee, wrote a dissent note. In his note, he has argued against the approach of the committee. He has argued that "...committee 'unlike infrastructure' did not seriously consider the 'commercial sector' and..." "it also willfully 'ignored the role played by private sector'". He also argued that committee has shunned away from using the surrogate variables in the cases, where data were not adequately available. He also criticized the approach of the committee in 'not suggesting 'any committed and 'time bound' programme.

- 4.2.3 The Indicators and Backlog Committee** (1997) set up by the Government of Maharashtra recommended that the backlogs be removed through a time bound programme. Removal of backlog would be the first priority for balanced regional development. Following principles are recommended:

- (i) The distribution of backlog provisions between districts of the State should be on the basis of their share in the total backlog.
- (ii) The allocations of annual provision for backlog removal should be made, so as to completely remove the total backlog in the following manner:
 - (a) Backlog of technical education should be completely removed in 3 years.
 - (b) The entire backlog of irrigation and road sectors should be removed within 7 years.
 - (c) Recommendations of this committee would take effect from 97-98 i.e. beginning of 9th Five Year Plan.
 - (d) Distribution of sectoral backlog removal allocation between State level and district level schemes should be in the same proportion as the district schemes have to state schemes.

4.2.3.1 I&B Committee pointed out some limitations in the process of backlog removal:

- (i) “A limitation is inbuilt in the process itself because, the backlog is assessed with reference to the State average for some years earlier than that assessment. The State average is not a static figure. It moves up every year because of the normal development activities in all the districts because of the process of removal of backlog and also because of the relatively faster development of advanced districts. In the long span, for which the process of removal of backlog continues that average, is substantially higher than the targeted average to which the backlog district may have reached. This, in a way, is an endless pursuit of a notional average.”
- (ii) “The impact of the process of backlog removal depends on the time span. If the span is very long, the gap between the current State average and the targeted State average will be very wide so as to make the whole process futile. This Committee, therefore, recommends a time bound programme and a schedule of allocations.”
- (iii) “Meagerness of allocations has lengthened the span of the process. This Committee, therefore, recommends that this should be corrected by adequate allocations according to the schedule.”

4.2.3.2 Thrust of Total Development Activity Towards Regional Balance

The Committee was of the view that the process of backlog removal alone cannot bring about regional balance. It was necessary to give a positive direction to the entire activity of planned development. It advocated planned development effort and also made several sector specific recommendations. It emphasized

- A. Comprehensive Long Range Planning
- B. Equitability of allocations
- C. Strengthening administration in backward districts

The Committee suggested creation of a new division within the Marathwada region. Since some districts have a large number of drought prone talukas, creation of a new division would provide required strengthening of administration of all departments. The Committee also recommended splitting of larger talukas in Vidarbha and Marathwada. Also, the Committee was of the opinion that the development in Vidarbha region needed administrative support in the form of additional revenue talukas, districts and Commissioner's region. The report of I & B committee and its recommendations were also not adopted by the government. The revised estimates of backlog prepared by the committee were, however, accepted and enforced by the Governor.

4.2.3.3 Directives of Hon'ble Governor of Maharashtra

In 1956, the original Article 371 was deleted and replaced by Articles 371(1) and 371(2) by the 7th Constitutional Amendment. 'Art. 371(2)' was inserted with the objective of giving constitutional recognition to the Nagpur Agreement to the extent practicable. It has given the Governor of Maharashtra the special responsibility for matters specified in sub-clauses (b) and (c). According to Rule 7 of Development Boards for Vidarbha, Marathwada and Rest of Maharashtra Order, 1994; the Governor of Maharashtra has the Special Responsibility of ensuring equitable distribution of funds for Development Boards, subject to requirements of the State as a whole. According to Rule 8, the allocation of funds or outlays made by the Governor shall be reflected in the Annual Financial Statement (AFS) to be placed before the State Legislature. This rule also mandated that the funds allocated for the regions and purposes should not be diverted to other regions and applications.

4.2.3.4 The Governor has been issuing Directives to the State government since 2001. The Directives of 2001 envisaged the weights to backlog, population and net sown area in the ratio of 50%, 25% and 25%. However, the Directives of 2010 point out that since the financial backlog in irrigation has been taken care of, no separate weight is necessary for backlog for the purpose of the remaining non-divisible amount in the irrigation sector. Therefore, the only factors that remain are population and net sown area. Directives of 2010 has mandated that “the divisible plan outlay after making necessary provision for removal of remaining backlog, would be divided amongst the three regions on the basis of population and net sown area with 50% weight for each factor”.

4.2.3.5 In the Directives of 2005-06 the Governor points out that since the past four years it is observed that although the outlay in the irrigation sector is allocated as per the Governor's Directives, but the disbursement of outlay is not in accordance with the region-wise percentages as stipulated in the Governor's directives.

The Directives of 2009 rightly point out to an anomaly in the methodology for calculation of financial backlog i.e. basic cost norms were as on 1st April, 2000 and

no adjustment has been made for *inflation* to arrive at the quantum of remaining backlog. This is bound to lead to a *mismatch between physical and financial backlog*.

4.2.3.6 The Governor's Directives of 2009 also noted that there is a trend of excess expenditure in the Rest of Maharashtra region even in 2007-08 and 2008-09 with significant shortfalls in Vidarbha region during that period. It was noted that *funds from backlog districts have been used in non-backlog districts*. The Governor's Directives of 2009 further noted that there are unspent balances.

4.2.3.7 Finally, the Directives of 2009 noted that “in spite of well settled principles of allocation of funds to the regions, the actual expenditure does not comply with these directives”. The reason for this, according to the Governor was “lack of adequate control and monitoring mechanism for the distribution and expenditure of funds”.

4.3 Major Methodological Issues and Considerations

4.3.1 Approach of FFC: Our approach in dealing with the problem of 'regional imbalance' in Maharashtra should be seen in the context of the past history of the policies. FFC has been a landmark report despite the fact that it was never officially accepted. Yet, mode of reasoning and formulation of the problem in FFC report has exercised a considerable impact. It has provided essential framework for official thinking about regional imbalance policy.

4.3.2 Earlier until the FFC report, the development backlog was often interpreted in ad-hoc financial allocations. FFC made a sincere effort in breaking away from this practice of ad-hoc provisions and made every effort to measure disparities in terms of the physical terms and physical indicators. It hoped that, the disparities measured in meaningful physical terms will be useful to define further government action in similarly quantifiable physical terms. However, as any such action needs to be funded, it had to translate such 'disparity- removing-action' in financial terms. Ironically enough, recommendations of FFC were later reduced essentially in terms of only the 'financial backlog' which it had hoped to avoid and overcome. Indicator committee later followed a similar approach and faced the same fate.

4.3.3 The strategy of 'backlog removal through financial provisions' has strengthened the misleading notion that expenditure equalization would guarantee development equalization. There may be several reasons for this unfortunate paradoxical outcome. Perhaps, FFC, at least implicitly, presumed that the political and administrative capacity to translate rupee worth of financial resources in 'tangible outcomes' would be uniform across regions and districts. It presumed identical quality of 'governance'. In other words, FFC simply presumes that administrative capacity to deliver would be 'near identical' across all the districts and regions. It also did not provide for explicit institutional mechanism for monitoring and evaluation of outcomes of the financial spending. Its exclusive focus on Government delivered goods and services did not admit any variation in the priorities across regions. Similarly, it did not consider variation in norms of resource requirements (or expenditures), which would be necessary across regions. Neither did they foresee the possibility of intentional abuse nor did they take into account the

possibility that both political representatives and administration can deviate from the stated goal and obfuscate it under financial illusion. FFC did not foresee the need to have any regional development strategy or equally the role and importance of private sector investments and the determinants of investment. As a consequence, it did not consider design of appropriate policies or the required reform of policies. As FFC implicitly presumed equal efficacy of the prevalent administrative framework of development administration across regions, it did not consider the issues concerning governance and effective democratic decentralization. In a word, it approached the issue on the premise that 'one size fits all'.

4.3.4 Some of the elements of FFC methodology deserve closer examination. FFC has mostly used 'indicators' which happen to be 'ratios'. As the sizes of the districts vary, the physical indicator of development accomplishment needs to be standardized (Incidentally 'district' as the regional unit was mandated for FFC in its terms of reference. For our committee, no such unit is prescribed). In many cases, the denominator of the indicator is total population or relevant sub-group population or land-area. This potentially poses problem if the rate of growth of the denominator varies across districts and similarly, rate of growth of the numerator also varies across districts. Given the fact that the rates of growth vary across the districts and if the state average value also moves upward, removal of the backlog may result in almost never ending or very long drawn process spread over 60/70 years. It appears that FFC, in some sense, anticipated this when it observes "that the concept of lifting the districts below the state average up to the state average is not a programme to be completed in a given time but a continuous process". It is even more intriguing to find committee recommending that analysis done by it should be done and attempts to reduce disparities made by considering a unit lower than the districts i.e. taluka. Evidently, the *variance* at the lower level of aggregation would, in most cases, increase. In such a case, the time-frame and resource requirement would lengthen even further! FFC had recommended that 85% of the plan resources should be utilized for removal of backlog and remaining 15% should be used for usual planning process. However, FFC did not consider implications of size of the resources, rate of growth in the resources adequately.

4.3.5 Reduction of inter-regional disparities over time has two inherent dimensions: redistribution and growth. Whilst both are important, theory as well as experience leads us to believe that unless there is enough growth, the redistribution aspects cannot be fully addressed and hence problems of reduction of disparities cannot be meaningfully addressed. This element of growth aspect becomes even more problematic in case of FFC approach (and also for Indicator committee in the later period). FFC exclusively focused on the growth and development achieved by government expenditure alone. Size of the available resources (mostly plan resources) is finite and fixed. The time horizon is limited and rate of growth of the resources available is by and large fixed. Given the amount of plan resources and almost predetermined rate of growth, in turn, determine the time period needed to eliminate disparities. The situation is further complicated and worsened when we consider population growth. In other words, the FFC approach did not realistically assimilate and combine these inherent elements (i.e. population growth, reality of fixed and limited resource availability and politically sensitive dimension of

time frame) in a successful coherent manner. 'Indicator committee' also did not address/consider these issues in designing the allocations.

4.3.6 FFC had consciously avoided use of the indicators that are often symptomatic of final result/outcomes of development (income, levels of enrolment, employment) and preferred only those indicators that were tangibly measurable as the result of government spending alone. It is well known that a very large number of spheres, notwithstanding crucial role of government in creating infrastructure and facilities, considerable part of the activities take place on peoples' own initiative i.e. private sector. FFC was, perhaps, acutely aware of these diversities in social, entrepreneurial and institutional history across regions. It decided to focus on what the government does or can do. As a consequence, FFC chose only those indicators and elements that would measure what government has done, could do and should do. It may be noted that, even in past (in the times when FFC studied the problem), size and share of investible resources under Government control were less than 25%. As a consequence, the ability of the Government to uplift the lagging regions through own investment expenditure was inherently limited. Due to its singular emphasis on government expenditures, road construction and storage of irrigation water were implicitly favoured more. Policies and expenditures related to actual delivery of water through CADA like schemes (outcomes) were less emphasized. FFC did not seriously examine the option of stimulating the regional economies through any specific big push appropriate to each region. Stimulation of growth and acceleration of economic development with the use of appropriate policy environment, strategic emphasis on dynamic comparative advantage of the region and necessary incentives were absent in the approach of FFC.

4.3.7 In last two decades, the role of the government in shaping the evolution of the economy has undergone several changes. Erstwhile restrictive regime of curtailing private investment has been more or less abandoned. The approach to regulation of private investment is becoming increasingly pro-competitive. Economy's openness to trade and capital flows across national boundaries has been substantially liberalized. Role of private sector in infrastructure and long-life capital facilities has increased. As an industrially advanced state, Maharashtra cannot escape and gloss over these far reaching changes in policy paradigm. These changes have both positive as well as negative implications for tackling the question of regional imbalances.

Hence, in tackling the question of growth, sources of growth as well as potentials of growth need to be addressed. FFC did neither raise the question of regional growth potential nor did it enquire the issue of regional comparative advantage. Its focus on the government initiated efforts as the sole objective of equalization did not warrant it to do so. This approach, as we now know with the benefit of hindsight, would prove insufficient and perilous for tackling regional imbalance. FFC also implicitly imposes the same order of priority for all sectors across 'regions'. Hence, the geographic-cum-economic diversity of developmental needs across regions is not adequately/fully recognized.

4.4 Indicators and Backlog Committee

In 1994, a Joint Committee of the three development boards called the 'Indicators and Backlog

Committee' submitted its first report to the Government in July 1995. This Report provided the assessment of relative levels of regional development in Maharashtra and a choice of appropriate Indicators for measuring economic development. In November 1995, the Governor reconstituted the 'Indicator and Backlog Committee'. This Committee had three members who were the members of FFC also. The terms of reference of the committee required it (a) to decide of appropriate indicators for assessing relative levels of development and appropriate sectors for assessing the backlog in different areas, (b) to ascertain relative levels of development according to such indicators and backlog in different sectors for every district, and where applicable, for every talukas having regard to the levels of development in the state as a whole, (c) to suggest appropriate action on bringing about balanced regional development on the basis of the relative levels of development and the backlog so ascertain; and (d) to suggest appropriate methods for ensuring equitable allocations of development expenditure over the areas of the three development boards.

4.4.1 Except for few variations, this committee followed the methodology of FFC. The terms of reference of the committee explicitly referred to “backlog in different sectors for every district, and where applicable, for every talukas having regard to the levels of development in the state as a whole”. It would be important and helpful to note the observations of the committee in this respect. “..(1.22)some of us were initially keen to have the sectoral developments compared for talukas as units. Some other wanted analysis and comparison to be restricted only to three regions. It further observes “(1.23) Talukas in some regions are relatively larger in size. The process of formation of new talukas is still continuing. Some new talukas are working independently only for revenue department. The remaining departments including the Zilla Parishads and Panchayat Samittees are continuing to function for the erstwhile larger talukas.” The committee has further remarked “(1.24) Getting district wise information was itself a very difficult task. It has taken more than a year for several departments to compile it. Taluka wise information would have taken an unduly longer time.”

The committee has rightly observed that choice of smaller and lower level units would increase the size of backlog and the variability will increase tremendously. “(1.25) A comparison for larger units like regions involves a partial set of negative values of 'below state average districts' by positive values of 'the above (state) average districts'. The comparison for districts has been found to increase the amount of backlog by 50% to 60% over what is estimated by comparison of regional levels alone. Nonetheless, it is necessary to locate really backward district not only in backward regions, but also in developed regions. Similarly, it is necessary to locate really backward talukas not only in backward districts, but also in the advanced districts also.”

4.4.2 It is also important to note that I&B committee did anticipate the divergence of administrative abilities in delivery of services. Similarly, importance of private sector investment as a critical element in elimination of disparity was also explicitly recognized by I&B committee. However, these elements were not very forcefully emphasized in the institutional scheme of resource allocations and strategy designed by it. The process of political dynamics in budgetary allocation and ability of the power elites to 'capture', can influence the availability of resources to the regions. These elements were not explicitly covered in I&B committee report.

4.5 Globalization of Indian Economy and Policy Framework

4.5.1 Opening Up: In last three decades, India's economic opportunities, resources and policy environment have been altered in many significant ways. As one of the major leading advanced state in India, Maharashtra's economy, too, has experienced similar remarkable shifts. The sources of enduring incidence of poverty and developmental disparity across regions should be appraised in the context of these changing opportunities and prospects.

4.5.2 In addition to lessened restrictions (liberalization), now there is a much greater role for private sector, including sale of Government owned commercial entities to private sector (privatization). Similarly, opportunities to access goods, services, financial savings and investments across international/cross national borders have become easier, less costly and less hindered than earlier (i.e., globalization).

4.5.3 Apart from increased openness, last two decades have experienced very important technological changes in telecommunication, bio-technology and emergence of new agriculture. Similarly, there is an increased social and political awareness about environmental and ecological consequences and remedies. The environmental conservation, protection and balanced use of alternative natural resources and techniques have emerged essential aspects of regulatory regime and the social awareness about the compliance has become sharpened.

4.5.3.1 Inclusion and Human Development: Two other aspects are also explicitly recognized in policy debates and discourses. One is the importance of *inclusive* growth (which has been prominent in all the official documents from at least the 11th Plan document) and the importance of *Human Development Index*, the computation of which is now officially undertaken periodically at all levels. Whilst the second is amenable to relatively easier solution through efficiently implemented CSSs, the first one is rather difficult since it deals with issues such as empowerment through livelihood and employable skills, which in turn, require reforms in educational system. As an aside, we may mention that we take into account both these aspects in our approach as well as recommendations.

4.5.3.2 Decentralization, Policy and Regulatory Reforms: In last two decades, the Indian political system has witnessed rise and influence of coalition politics and coalition governments. These developments have influenced the nature of federal balance. States have been gradually building consensus for harmonizing their taxes and in near future may endorse the integrated GST design. With the 73rd and 74th amendments to the constitution, Government has acquired distinct third tier. Increasing role played by local self-governments in rural as well as rapidly urbanizing areas has contributed to potential change in federal arrangements.

Several new institutions arrangements of regulation, policy formulations have emerged e.g. Power Regulatory Authority, Water Resource Authority, Science Technology Commission and Renewable Energy Development Agencies.

Emergence of 'rights based approach' is the remarkable new feature of economic policy: e.g. right to education, national rural livelihood mission, right to demand for work with guarantee etc. There has been increasing demand for transparency in working of policy and functioning of administration. In response to these demands, 'Right to information' has been now established. Similarly, there is increasing demand for decentralization. Role and voice of the Panchayat Raj institutions has been enhanced. More importantly, the role of state in overall economic sphere has been redefined. Role of the private sector has been enlarged, and erstwhile restrictive policies towards private sector have been considerably diluted.

4.5.4 Change in Maharashtra: In last 25 years, economic growth and expansion in Maharashtra has been impressive. The size of Maharashtra's economy today is 14 lakh crore in current prices. This level is equivalent to the whole of Indian economy 15 years back. about 46 percent of the population in Maharashtra resides in urban areas. Share of agriculture in SDP has dwindled to 12.5 % and services sector accounts for 55% of the State domestic product. IT enabled technologies have radically altered the several business processes as well as modes, speed and coverage of transactions. Many stages of erstwhile economic transition and evolution can now be easily skipped due to the so called 'leap-frogging' effect.

All of these policy changes have important implication for regional imbalance. Exclusive reliance on direct government expenditure based intervention needs to be revisited. Stimulating much greater participation of private sector through appropriate incentives and necessary policy reforms will assume greater significance.

4.5.4.1 *The actual economic conditions in Maharashtra offer a strange mélange of socio-economic contradictions. Income levels across all strata have generally improved. Measures of poverty do indicate definitive decline. yet, regional disparities and political frustration about it have persisted. Across the regions, sense of relative deprivation and 'lagging behind' has hardly disappeared.* Indeed, there was some convergence in the decade following the IB committee (we have deliberately restricted ourselves to this starting point because while going further backwards and analyzing from say 1960 could be a useful academic exercise, we decidedly look to the future. Also, reliable and consistent data (un)availability does not allow us to undertake such an exercise. We also believe that the two preceding committees have useful analysis of what went on before). In the last decade, reversal of the trend (divergence) is seen. This was due to at least three shocks to the economy that changed the dynamics. These were one, the instability/ volatility in agriculture that negatively impacted especially Vidarbha, two, the change in the structure in productive active activities with services sector zooming ahead (this was a positive shock to the economy, but worked against the lagging regions in relative terms) and three, the emergence of coalitional politics with skew distribution of powerful portfolios in terms of regional leadership. Add to this the controversies in political and public sphere regarding 'irrigation', farmers' distress and suicides, the rise of Naxalism as well as malnutrition and possible weakening of political leadership in

the region and the picture is complete. All of this led to divergence in the last decade and reemergence of the disgruntled political/economic condition as well as perception leading to the appointment of this committee.

4.5.5 Financial Backlog and Our Departures: We have already commented on the deficiencies of terminology of 'financial backlog'. This mode of thinking that is couched in the idiom of financial backlog needs to be abandoned. This idiom has deeply conditioned the mode of policy thinking and driven it to unrealistic expectations. It has also generated certain optical illusion of fiscal equalization. It has prevented realistic and multi-pronged approach required to deal with the problem. We take this into account whilst formulating our approach and recommendations. In our approach, we believe in following the principle of mitigating the headwinds and exploiting the tail winds.

4.5.6 Two major departures in perspective would be necessary. (a) 'Outcome' rather than spending levels should be monitored. (b) All other simultaneous sources of growth as well as growth through government spending (crowding in) should be nurtured, mobilized and harnessed. It should be noted that size of government plan/development expenditures are only a part of the total investible resources (much less than 25%). The relevance and importance of government investment/expenditures is well known. Yet, government expenditures can scarcely be adequate to equalize developmental aspirations and goals. Remaining 75% of the resource mobilization would have to come from private sector. In absence of promise of sustained growth, appropriate facilitation and adequate incentivisation, private sector investment will not be forthcoming. Forces of economic growth, which are vital and necessary in reducing development disparities, will hinge equally on government's ability to incentivize and nurture all non-government sources of growth. We believe that the design of policies and signaling through policies play significant role in development strategy. Hence, better design and reforms of 'State' as well as 'Union' government policies will be of immense importance in our approach.

4.5.6.1 Institutions: So far the policy solutions have been principally focused on financial resources allocations and allocation formulae. In our view, the allocations of investible resources are important, but these alone will not be adequate to address the complex of several elements that affect 'outcomes'. As we have noted elsewhere in this chapter, physical and policy induced resources apart, geography, culture and institutions matter a great deal. The social capital (which is a slow moving parametric rather than a control variable) comprising of community norms, its absorptive capacity, social development, leadership (*including political*) role and caliber (which are all interlinked) are very important. Amongst the control or policy variables are a number of supportive policies and policy reforms. Moreover, the 'brick and mortar' elements such as building of administrative delivery system, quality of deliveries, effective decentralization that would take government closer to the public are extremely important. In this view, we have proposed several policy reforms and novel decentralized institutional design for regional boards. These supportive institutional elements have been dealt with in the separate chapter on 'Governance'.

- 4.5.7** The question of regional imbalance needs to be understood in terms of process, strategic initiatives, responses and 'outcomes'. The initial conditions across regions are evidently different. Resource endowments and gaps across regions are also widely dissimilar. We may refer potential resources and opportunities as 'nature' and strategic efforts of policies to mobilize and shape (or reshape) them as 'nurture'.

Moreover, the 'nature' based (resource based) divergences notwithstanding, in certain 'merit goods' (which merit treatment like public goods although they are not technically public goods) and development goals all regions deserve to be assured of equal access and outcomes. In other words, equality of access and outcomes in certain aspects and dynamic regional comparative advantage, as the growth propelling force should be made to work simultaneously. We have, therefore, defined this two track approach. The elements of access and entitlement that should be equalized across regions are broadly referred to as 'public goods' and we advocate equity in such 'public goods'. We elaborate this approach in following section.

4.6 Our Vision and Approach

- 4.6.1** Our approach essentially means a 'Shift of Paradigm' regarding the thinking on the development strategy towards lagging regions. *The current approach thus far essentially centered on the concept of “backlog” which is decidedly inadequate to deliver the requisite outcomes by our analysis and past experience.* The recent development experience of other parts of our country as well as of other developing countries suggests that this is perhaps a somewhat simplistic model. As we shall see later, our approach is informed by a norms/ entitlement based development and growth acceleration. An acceleration of growth of any region, particularly that of a lagging region, is a complex process and depends on a number of factors. To be sure, greater government expenditure is one of the important positive factors, but ***economic development and growth outcomes critically depend on many other factors such as history and geography of a region, physical resource endowment, mobilization of social capital, supportive policies, physical infrastructure, institutional capacity, the region's political leadership, the governance and on low transactions costs of doing business.*** In particular, we would underline the **role of social capital and entrepreneurship which has a vital role in growth and development**, but are in some sense parameters arising out of socio-political-cultural history. This does not mean that nothing can or should be done about it, but only that there are no magic silver bullets. This perspective essentially suggests that our approach will need to be multi-dimensional and not focus exclusively on government expenditures. Yet, another implication of this multi-dimensionality is that different regions will require a specific and unique combination of measures for accelerating growth and development. Finally, we need supportive policy reforms from the State and the Centre, which would link regional empowerment with accountability, taking into account regional aspirations. In other words, we should carefully ***eschew “one size fits all” approach*** and this is what our report endeavours to do.

- 4.6.2** We have chosen the **district as a unit of analysis** and the disparity at the regional level will be aggregated from the magnitude of development distance seen at the level of the component districts. There was considerable discussion on this aspect within the committee. It was felt by

some that in case of treatment of certain indicators, Block/Taluka, District or Regions would be convenient and preferable units. Keeping the issue of measured imbalance at manageable level was an underlying principle. The take away lesson from earlier work/studies failed to throw up a single winner. As far as the stakeholder's views were concerned, divergent views were observed and given the diversity of conditions, this was natural. Stakeholders from Marathwada favored region as a unit, the Vidarbha stakeholders opined in favor of 'district' as a unit and RoM stakeholders wanted 'taluka' to be the unit of analysis. Finally, consideration of the underlying reasons for such divergent opinions and two main reasons prevailed in helping us reach our decision. Firstly, official data of reasonable quality and consistency at the lowest level of aggregation was the district. Secondly, the seat of extant government structure and administration is located at the level of district. Pragmatism as well as substantive points relating to what we recommend in our report thus suggested that we opt for district as the primary unit of analysis in our approach. This ties up neatly with the other consensual tenet of our approach, namely, our concern with strengthening decentralization. This avoids too much pressure on line departments as well as steer clear of attempts to micro-manage. To anticipate further part of our approach, Regions are the basis of formulaic devolution of plan funds under the aegis of 371(2). Districts will be the important seats of planning and implementation towards removal of developmental deficit.

- 4.6.3** The blocks/talukas are considered in case of treatment (in a mission mode) pertaining to special issues. These special issues were identified as virtual or imagined regions and concerned issues relate to **tribal** population and **DPAP**-like areas. These are very important and sensitive issues and as such we have special write ups about these imagined regions which do not match with the usual conception of regions. We believe that our solution to the conundrum (related to unit of analysis) will be acceptable to all given our treatment of imagined/virtual regions (especially DPAP-like). Our belief is further strengthened by our recommendations with regard to various block level sectoral and spatial floors for devolution of plan funds that would help negate fears of elite capture at the regional/district level.
- 4.6.4** As indicated in Chapter Three (**Regional Development: Trends and Patterns**), per capita district domestic product across the districts varies greatly. Reduction of inequality has two related goals. As a leading industrial state, Maharashtra should aim at near elimination of poverty and of more equitable regional balance. In doing so, we need to assess where we are, in terms of sectoral shares in the regional production profiles. It is seen that relative over dependence on primary and relatively less on services sector characterize the performance of backward regions thus far. At present, per capita income of Marathwada is 60 per cent of the per capita income of Rest of Maharashtra. Similarly per capita income of Vidarbha is 66 per cent of the per capita income of Rest of Maharashtra. This gap needs to be reduced by a third over the period ending with the 14th FYP or so, resulting in a scenario where Marathwada has a per capita income which is around 73% and Vidarbha's per capita income is to the tune of 80% of per capita income in RoM. This would mean that the rate of growth of per capita income in Marathwada and Vidarbha will have to be in the range of 14.5 to 15 per cent. For achieving these goals; i.e., near elimination of poverty as well as reduction in income disparity, apart from direct public

provisioning of key public goods, we essentially need accelerated economic growth, which in turn, requires enhancement of public and private investible resources and economic opportunities. In the immediate future, Maharashtra State has the capacity to emerge as one of the fastest growing economies not only in India but indeed the world. ***Our overall perspective for Maharashtra is that of a progressive leading State in the country which is green and has first rate educational system benchmarked at global levels. Maharashtra State should aspire for and achieve near elimination of poverty in all its regions by 2030. Moreover, as a progressive state, we should evolve social policy with measures such as universal health coverage to all our residents.***

- 4.6.5** Government resources should be deployed to generate the equality of publicly provided goods and services. For example, we have advocated 'norm'-based equalized access to drinking water and protective irrigation for agriculturists from all the regions. It is not enough to create irrigation storage infrastructure. It should be further complimented by the policies that insure appropriate crop pattern, better end deliveries and utilization of water that would maximize returns per unit of water use. Hence, the policy reforms such as 'CADA' are integral part of our approach. Such a strategic approach applies equally to the virtual or imagined regions (i.e. tribal and DPAP like regions) as well.(See Box 4.1)

BOX 4.1: Our Two-track Approach to 'Water'

The approach explained above may be well-exemplified in our treatment of water. We have distinguished water as 'public good' and water as 'productive resource': As a 'public good' 'Minimum norm' based availability of water i.e. 140 liters per day per capita (for drinking and other related life needs) will be provided to all citizens of Maharashtra. This access to water would be equal to everyone in every region. Adequate storage of water on regional basis would be an essential prerequisite for this purpose.

While drinking water will be the first priority, the water resources will be utilized predominantly by agriculture and also by industry (including all non-agricultural productive use) for productive purposes. The policy towards such uses will have to be designed taking into consideration sustainable agriculture, productivities involved and their capacity to accelerate growth. Access to technologies (e.g. micro-irrigation, recycling of water) supportive institutional structures (e.g. New Command Area Development Agency, Water Users Association), appropriate level of incentives will be extremely important in promoting more rational and efficient use of water as 'productive resource'. Evidently, the policy towards water as productive resource will be on distinct basis than 'water as public good'. While suggesting such two-tracks of water use policy, we have also taken into account potential dictated by the hydrological realties e.g. the size and variability of rain-fall, 'surface' vis-à-vis 'ground' water availabilities, retention capacities of different terrains. Nature gifted 'storage capacities' are very different across regions and storage accomplished so far also differs widely. Our recommendations take into account such divergences while making allocation of resources for future development. Especially for the DPAP regions, where harnessing of water through watershed development is critical, our approach and the resource allocation that we have suggested will imply meaningful shift in the approach towards this vital resource.

Over a period of time, dimensions of water as a productive resource have undergone a change. Technological options and institutional alternatives have evolved much differently than those available three decades back. It is important to take into account the significance of improvements of delivery mechanism in water-resource use. In last 50 years, we have created few hundred small, medium and large projects based assets. A very large number of them are in disuse, even wasted due to lack of investment needed to complete the 'last mile' of the projects! Thus, we not only need to continue emphasis on creation of new assets and new projects, but also an equal emphasis on improving water productivity in such a way that the growth could be accelerated at much faster pace.

In the medium and long term, we expect policies to incentivize productive use of water that would help extract the value of this natural resource rationally and management of water on the basis of 'basin' rather than regions and states and in consonance with the emerging national water policy framework. In doing this, Water Regulatory Authority of Maharashtra will have a strategic role to play. Our committee recommends that this authority may be requested to prepare policy paper on these issues for the consideration of the government.

4.6.6 Simultaneously, the government should undertake such strategic initiatives in each region which would accelerate the growth of the industries in which the regions have comparative advantage. Such initiatives eminently include critical infrastructural investments and introduce necessary policies which would invigorate private investment. We have suggested several policy reforms and initiatives which would instill necessary incentives for economic investments necessary for development. Government strategic initiative should anticipate the nature of economic dynamics that would be operative in future. As the experience of the advanced regions suggest with economic development, the relative importance of industry and services may be expected to grow fairly rapidly. Thus, together with invigorating agriculture we should also strive to consolidate future growth oriented sectors. The proposed approach has considerable emphasis on the new emerging sectors including new agriculture, since business as usual in perpetuating traditional agriculture will simply not work (see Box 4.2). In particular, water stressed regions require supportive measures that would shift the labor force in more productive avenues. This will require concerted efforts at paying attention to the quality of education that will improve human resources and endow appropriate skill sets, so that people are empowered in terms of employability.

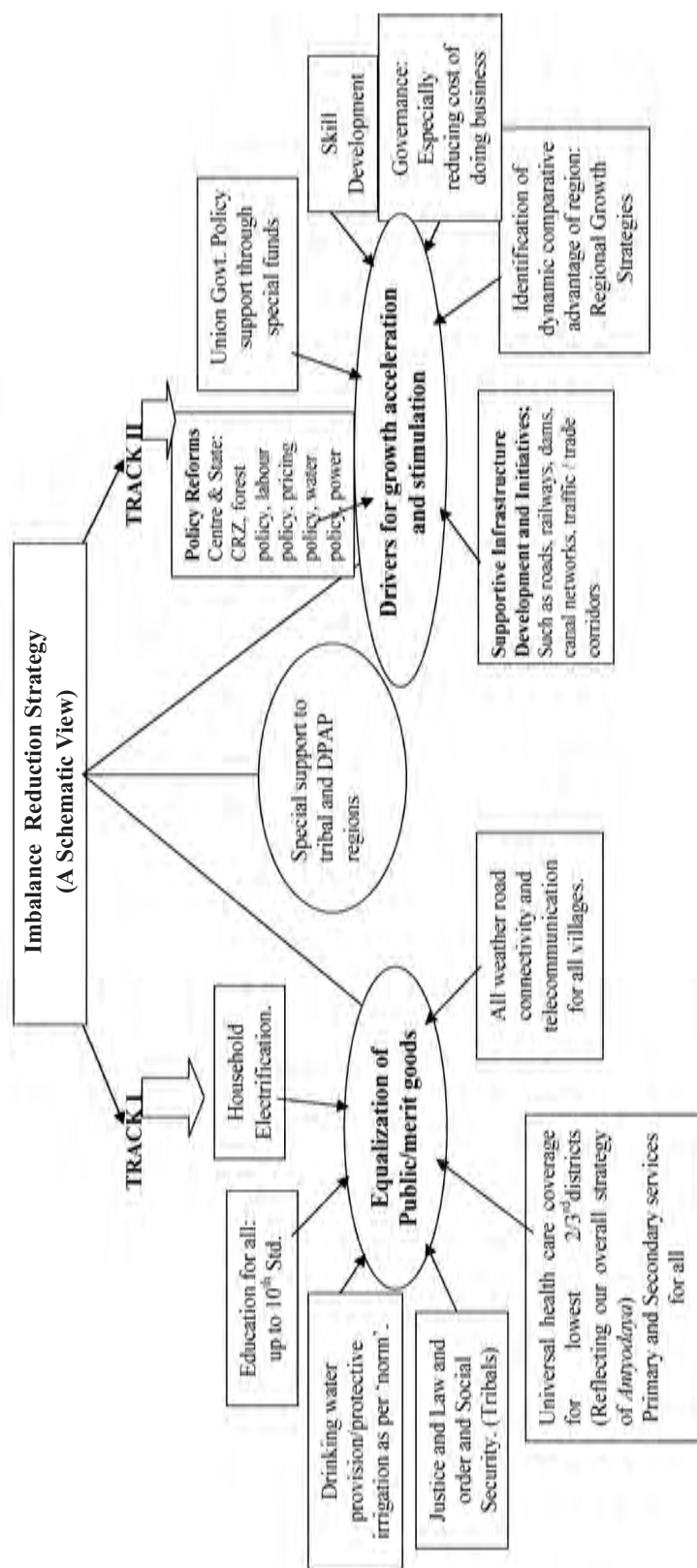
BOX 4.2 : New Agriculture

As we have demonstrated later, in the Chapter on 'Regional Growth', the near stagnation of agricultural growth in Vidarbha was one of the major shocks that exacerbated the regional imbalance in the last decade. It is necessary to think about the agriculture in the lagging regions with diverse simultaneous pathways. Dry-land farming occupies very large part of the agriculture in Vidarbha and Marathwada. Technological options in improving dry land farming are many. Foremost among them are the introduction of protective irrigation, rain water harvesting approaches such as conservation measures, watershed development and farm ponds. These need to be supplemented by micro-irrigation techniques for improving water productivity and promotion of new technical and commercial pathways in major crops deserve a 'mission mode' approach in Vidarbha and Marathwada.

Moreover, farmers should be encouraged to diversify the crop-pattern in favour of non-traditional high value crops and horticultural crops complemented with research in water stress resistant varieties. It has been noticed that with the increased use of ground water, Marathwada has been able to improve its grossed crop area index. This partly explains relatively superior performance of Marathwada region over that of Vidarbha. Both the regions should receive the boost in form of 'new agricultural growth strategies', which would combine various techniques ranging from green-house technologies, micro-irrigation and fertigation on the one hand and diversified market oriented crop-pattern, group farming, group marketing and contract farming aimed at value sharing arrangements with processing industries. It would be necessary to reform the present forms of tenancy regulation in such a way that emergence of tenancy land markets are rendered open, transparent and widened, without causing loss of entitlement to the owner of the land. This will go a long way in reaping scale economies in agriculture.

- 4.6.7** Better infrastructure, adequate incentives and ease of doing business would work only when supported by good governance. In the recent decade, many so called 'backward' states have been able to achieve impressive transformation due to the enhancement in delivery mechanism and administrative improvements. We have considered this dimension in greater detail and suggested certain novel re-arrangements that will make administration more intrinsically committed to the regional balance and development goals.
- 4.6.8** State Government's efforts in elimination of regional imbalances will need adequate quantum of resources. We have assessed the quantum of resources that government can mobilize and allocate to redeem the developmental disparities. In our view, the state government will need judicious combination of additional resources mobilization and allocative restructuring of the existing resource use. We have considered the availability of resources at the aggregate / macro level and necessary requirements of the sectors in a realistic and conservative manner. Our projections in this regard are presented in the Annex 4.1.
- 4.6.9** The strategy that we have suggested has several interrelated strands. In our perspective (to repeat), near complete elimination of poverty, greater socio-economic empowerment in terms of better access to livelihood and employment would be the primary objective. We have proposed ***two simultaneous tracks of government policies that would ensure more rapid elimination of regional disparities. (a) Equalization of access to key public goods (identified elsewhere) and (b) Strategies of Accelerated growth based on improved supportive infrastructure, growth of the sectors in which regions have dynamic comparative advantage, appropriate incentives and policies to accelerate private investment and employment opportunities in all regions including 'imagined regions' (i.e. Tribal/DPAP).***
- 4.6.10** The components of the two tracks dealing with equal access of key public goods and services and growth acceleration using regional specificities and dynamic comparative advantage, dealt with in the following sub-sections, throw up the outcome indicators. These are further elaborated in the relevant chapters as well as in chapter dealing with recommendations, wherein the priorities in accomplishing them in a phased manner are also dealt with.
- 4.6.11** This approach is graphically summarized in the following figure No. 4.1.

Figure 4.1



4.6.12 In the first track, government policies should aim at equalizing the provision of the key publicly provided public and merit goods. Availability and access to such goods would be available across all regions without any discrimination and compromise. These would be based on prescribed norm and ensured as 'Right'. This is in consonance with present policies already advocated and approved. Such equalization shall be attempted in the elements listed below:

- i. Education for all: up to 10th Std.
- ii. Healthcare: Basic Public Health services for all and Universal health care coverage in rural population beginning with lower 2/3rd districts.
- iii. Drinking water and basic livelihood provision on 'normed' basis.
- iv. All weather road connectivity for all villages.
- v. Household Electrification.
- vi. Justice and law and order and social security (especially for Tribals).

Poverty, low level of incomes, precarious livelihoods and lack of entitlements and access are the well-known sources of persistent under development and stagnation. Some of them may be tackled by creating 'rights', 'norms' and assured entitlements. In recent years, education, access to education, access to some selected aspects of health is being assured through norm based entitlements. *The norms which we have suggested above exceed the national norms.* As an advanced leading state, Maharashtra should provide the initiative and lead in these norms and entitlements. It may be pointed out that, presently at National level, there is no mandatory norm for drinking water. We believe this must be included as the urgent priority. Such entitlements would, in principle, equalize access and opportunity in all regions. We do endorse such policy initiatives. We hope that, reduction in the disparities in the above mentioned public goods would be nearly eliminated by 2025. Some of these disparities can be eliminated even earlier. Most of these norms based entitlements are measurable. Our appraisal and assessment of fiscal resources of Government of Maharashtra suggests that such equalization is eminently feasible.

4.6.13 However, it is necessary to reorganize that such an 'equalization of access' would also warrant certain flexibility and adaptive variability (in norms of provision) across regions. For example, there would be wide variability in average distance the young children would require to walk every day to attend school or distance from residential locality to nearest PHC. Therefore, the parameters and norms defined on 'state-average' basis may be inadequate and inappropriate. Region specific variations would be warranted for genuine equalization of norm based access.

4.6.14 Political capacity to 'pull' resources to their regions, in a pork barrel manner apart, we have also observed marked differences in the capacities of administration responsible for implementation and delivery of outcomes. This aspect was often gravely over-looked in previous policies. This factor has been a significant cause of unequal outcomes for the comparable levels of resource availability. It is now well recognized that, administrative capacities to deliver publicly provided goods and services differ across administrative units and regions. We need conscious effort and novel institutional arrangement to tackle this problem. Such novel institutional arrangements would ensure necessary flexibility as warranted by the regions. We have considered this major

issue of design of governance in the new organizational cum institutional structure and design which we flag below; the details are discussed in the 'Governance' chapter.

- We wish that relevant issues of dissimilarities regional priorities/ preferences need to be (and should be) addressed by the democratic representative authorities and not by any other external authority. Similarly, variation in norms/average expenditures suitable and appropriate for each region should be handled by regional level planning/policy authorities.
- Mechanism of evaluation of outcomes, efficiency and revision through learning must be undertaken by independent regional authorities.
- Monitoring of delivery mechanisms, innovations in technology, institutional innovations is a continuous process. Independent Evaluation Agency (IEA) should be in place to fulfill this need.
- Setting up Maharashtra Council of Development Research (knowledge based approach and support for policy making).
- Setting up of a State Statistical Board (along the lines of National Statistical Commission), without which, many of our proposals will be rendered infructuous.

We hope that with the help of novel arrangements that are suggested by us, 'norm based equalization' will be more meaningfully and sensibly accomplished. These arrangements have been distinctly and elaborately described in a separate Chapter on 'Governance'.

4.6.15 Role of Governance In Balanced Regional Development:

Governance is a pivotal factor in ensuring the development of any country, region or area. The best way to prevent disparities and imbalances in development is to institute such governance mechanisms, which would not allow the disparities to occur in the first place. It is with this long term preventive approach to the problem of unbalanced regional development that the Committee has deliberated upon the governance issues to a great extent. In fact, a dedicated and detailed Chapter on 'Governance' is a vitally important and integral part of this Committee's report.

New arrangement of regional boards (which would deal with sectoral planning choices and devolution for lower units) that we have proposed, presupposes strong linkage with the overall growth initiatives suggested by us.

Committee believes that economic and inclusive social development and accelerated growth based on a dynamic regional comparative advantage should be the primary focus of the regional policy. Regional disparities have different causes and dimensions and hence, may not be amenable to treatment by a single strategy. On the other hand, our advocacy of the equalization of access in public and merit goods ensures equality in development status of all the citizens of Maharashtra. Given the divergences in the resource base, abilities and aspirations, the regions should have the appropriate institutional mechanism to decide their priorities.

In our Chapter on 'Governance', we have endeavored to suggest a mechanism of region specific governance within the overall governance framework of the State. This will have multiple

advantages. On the one hand such a mechanism would take the governance processes closer to the respective regions, thus addressing the feeling of neglect and deprivation, which echoed consistently during the Committee's consultations with the stakeholders from the three regions. On the other hand, it would enable more evidence based processes of decision-making around planning, budgeting, implementation, monitoring-evaluation and policy formulation, so that there is greater objectivity and fairness in the development process. Further, regional empowerment will negate the skewed pattern of political and administrative power sharing across regions observed in recent times.

The Committee hopes that the governance mechanism recommended in this report would usher in a new dimension of balanced regional development, if implemented in true spirit and rigor.

4.6.16 Need For Strengthening Statistical Systems:

Availability of comprehensive, up-to-date and verified public statistics is the prerequisite for proper reviewing of any issue. During its deliberations, the Committee faced serious constraints on the availability of sound database for analysis of the issues under consideration and for drawing inferences. At present, the Directorate of Economics and Statistics (DES) is the nodal agency at State level to collect, maintain, analyze and publish the various kinds of statistics. Most of the data compiled by DES is provided by the field officers or is collated from the MIS (Management Information System) of different departments. There is hardly any control or inputs of DES in this system of gathering data. This raises questions again about the validity and reliability of data.

Many reforms towards strengthening of statistical systems at State level are on way. The State Statistical Strengthening Project (SSSP) taken up by DES under instructions of the Union Ministry of Statistics aims at significant improvement in the credibility, timeliness and reliability of the State level data is expected particularly in respect of 20 key indicators identified for tracking of various aspects of development. The Collection of Statistics Act, 2008, passed by the Government of India also has many provisions for the strengthening of statistical systems.

4.6.17 Economic and developmental disparity have many more sources and causes. Availability and growth of resources primarily shape the extent of economic divergence. In case of some of the resources, physical equalization is impossible. Every region has its own distinct material/natural resource endowments. It is necessary to recognize that, diversity and distinctions in resource endowment together with range of technological options shape the dynamic comparative advantage of a region over a period of 15-20 years. Growing technological options do alter the comparative advantage. Thus, it is not merely physical resources, but technological and institutional possibilities of doing business that should be innovatively experimented. Similarly, response of the stakeholders to re-organize themselves can harvest better outcomes. For example, many rain-shadow talukas have made significant advances by changing crop-pattern, or switching to horticultural crops or shifts in activities allied to agriculture. E.g. milk production and processing. We need to define economic growth strategy closely suited to regions potential and effort.

4.6.18 The most critical aspect of the dual track strategy that we have advocated is acceleration of economic growth, of course, with human development concerns being taken care of by the first track. However, it must be recognized that the nature of equalization of the essential public-cum-merit goods for equalized human development would be sustainable only with enlarged and deepened sources of economic growth across regions. Devising an innovative and effective strategy of accelerated growth is far more challenging task. State Government and Union Government policies for growth acceleration have four elements: a) providing physical infrastructural impetus with necessary investments b) facilitating development of skill developments and institutional capacities c) stimulate private investment through appropriate encouraging environment and lowering the cost of doing business d) Undertake Big-Push projects that would be important via an optical signal to create credibility for government's intent apart from providing backward and forward linkages arising due to positive externalities.

4.6.19 Design of any regional growth strategy and development policy should identify key areas of drivers of accelerated growth in infrastructure access and opportunities. In the present context, the major notable deficiencies are:

- 1) Power requirement of agricultural and industries.
- 2) Water for agriculture and industries.
- 3) Investment resources.
- 4) Connectivity and Market proximity.
- 5) Capacity to attract private investment.
- 6) Social capital and institutional capacity.
- 7) Quality of (good) governance.
- 8) Skills development or creation of human capital.
- 9) Credit availability for economic activities.

Due to paucity and availability of the suitable data, it is not possible to develop suitable index for each of these 'access-deficit'. We have, however, undertaken in-depth assessment of the access to water, road connectivity, power and partially credit availability in each of the region.

4.6.20 Role of government in providing long-life infrastructure such roads, bridges, ports, railways is well recognized. Adam Smith mentions them as the 'duty of the government'. "The third and last duty of sovereign is that of erecting and maintaining those public institutions and those public works, which, they may be in highest degree advantageous to a great society, are however, of such nature that profit could never repay the expense to any individual or a small number of individuals should erect and maintain.... that the erection and maintenance of the public works which facilitate commerce of any country, such as good roads, bridges, canals, harbours etc. must require very different degrees of expense in different periods of society, is evident without any proof". In facilitation and creation of these crucial overhead infrastructures, state government as well as Union government have important role to play. State government

initiatives with or without PPP must be strategically planned to accelerate the connectivity and business potentials of the backward regions. Business establishments choose and prefer the locations which have (a) proximity to raw materials inputs supplying centers (b) proximity to skilled labour and (c) proximity to markets for the produced outputs. As indicated above, good road, rail and air traffic connectivity alters the proximity. In our deliberations and interactions with the experts and administrative departments have revealed interesting potential projects that would provide big push to backward economic regions. We illustratively list below few of the Big Ticket projects and important among them: MIHAN project in Vidarbha, Surat-Nagpur trunk road, Latur-Ratnagiri highway, Mumbai-Bangalore corridor, East-West Port to road connectivity for Konkan, Delhi-Mumbai corridor, Sholapur-Osmanabad-Jalna-Verul rail road. In addition to the railway and road networks, Maharashtra Government should urgently consider strategic options for development of airport connectivity in the state. In view of accelerated growth of investments in manufacturing and service sectors, enhanced air traffic connectivity will be a crucial infrastructural element.

4.6.21 Investments of private sector are going to be a major driver for growth acceleration. It will play an important role in infrastructure including social sector such as health and education. Ability of the State government to induce and attract private investment in backward regions will be a major challenge to be tackled in near future. State government should make every sincere effort to enhance investor friendliness of its own industrial policies. Many of the stakeholders have pointed out the hurdles faced by them in working within framework of government's regulatory policies. In our chapter dealing with regional growth strategies, we have outlined important reforms in functioning and operations of MIDC. Costs of doing business in Maharashtra in general and Marathwada and Vidarbha in particular are supposed to be very high. Business entrepreneurs have complained about numerous permissions and clearances they are required to have. Many of them are handled by the government offices located in Mumbai. We have made some specific observations and suggestions on this aspect. In accelerating industrial growth, each region is likely to face distinct constraints and requirements. In this view, we have recommended that each region should have separate regional directorate of industries. (For further details, please refer to the Chapter on 'Industrial Growth and Policy').

4.6.22 More importantly, State government should appraise and focus on comparative advantage of each region. As pointed out earlier, the natural and physical resource availability alone does not define comparative advantage. Technological advance and diversified options, infrastructure suited for backward and forward linkage industries, human skill available, educational institutions and business friendly policies define the dynamic comparative advantage of the region. In other words, availability of these suitable factors would generate the comparative advantage. For example, telecommunication in India has improved with extraordinary rapidity. Further enhancements anticipated through broadband connectivity would generate such many business opportunities which were never ever imagined in the recent past. This technology should be deployed and utilized for developing/evolving new modes of knowledge dissemination. State government should invest in developing and enriching information-cum-knowledge content in vernacular languages. In future, a number of on-line services would

become a feasible business propositions for the backward regions. As we have noted in our chapter on industry, all the backwardness indices notwithstanding, Jalana has emerged as a major centre in steel and forging products as well as 'auto-cluster' on one hand and 'seed capital' of Maharashtra on the other. Similarly, Aurangabad has emerged as major centre for pharmaceutical industries. (See Box No. 4.3 for illustrative list of possible technology and policy reform initiatives for acceleration of sectoral and regional growth).

In the coming decades, the role played by knowledge economy will be very crucial. State government should recognize the future potential paths of development and have a vision of being the advanced state with leadership in knowledge economy. State government should gear up the process of strategic growth and reforms in higher education. It should endeavor to transform and upgrade the State Universities into model institutions of higher learning and academic freedom and rank themselves amongst the world's top 100 universities.

Box 4.3

Illustrative List of Specific Initiatives for Acceleration of Sectoral and Regional Growth

- a. Solar energy initiatives in Marathwada & DPAP regions.
- b. Promotion of micro irrigation and switching to micro irrigation wherever possible.
- c. Water shed development mission.
- d. Food processing technological mission.
- e. Textile mission for Vidarbha and Marathwada.
- f. Distinct Tourism Development Missions for Konkan, Marathwada and Vidarbha.
- g. Protective irrigation policy and appropriate crop pattern initiative.
- h. Fodder and milk production mission for lagging regions including Adivasi region with Wadi approach.
- i. Horticultural mission for Vidarbha, Konkan and Marathwada.
- j. Port connectivity roads for Konkan.
- k. Flood control –cum- power- cum protective irrigation planning for hilly regions of Konkan and Nashik Division.
- l. Drinking water/Recycling and complete sewage treatment mandatory for urban areas and industries.
- m. Initiatives for industrial dispersal.
- n. Changes in crop-pattern.
- o. Improved access to Agricultural credit and promotion of warehouse receipt based credit to farmers.
- p. Funding gap support for agro processing.

- q. New Agriculture' related projects and calibrating changes in crop patterns.
- r. Aerospace and Aviation industry manufacturing hub in Nagpur.
- s. Dry-land and Rain-fed farming development mission.
- t. Broad-band connectivity all over Maharashtra.
- u. Development of educational software applications in regional language.
- v. Community Forest Rights.
- w. Skilling of Tribal Youth (mission).
- x. Value addition (processing/marketing) of forest produce.
- y. Entrepreneurship (including social) training mission.

4.6.23 In our approach, we have also highlighted the responsibilities and role of the Union government. There is a full section on the 'Role of Central Government' in the 'Governance' Chapter. We believe this to be important and it follows from the Constitutional Amendment 371(2). Thus, *the Central government must be as much engaged and indeed not only carry out policy reforms in conformity with the mandate of 371(2), but we also believe that it should provide funds through (say) the Finance Commissions*. There are some sectors that are within the domain of the Union government e.g. Railways. Commercial prosperity of Marathwada region will be radically altered if the long pending overdue Railway projects are implemented with due alacrity and urgency. Similarly forest policy, environmental clearances related to forest areas, royalty rates and payments on major minerals from Vidarbha region and coastal restriction zone policy in Konkan are within the domain of the Union government. The growth in backward regions can be easily accelerated if these policies are suitably amended and changed. Moreover, as we have argued, Marathwada region is most suitable and potentially very promising location for development of the defense industrial and manufacturing hub. Some of these enterprises will be under the 'Ministry of Defence' and related private supplier and ancillary networks of private supplier can speedily develop in this region. The question of regional growth acceleration of these backward regions deserves to be appropriately supported by the policy reforms of the Union government.

4.6.24 In the coming future years, many infrastructure projects will be under Public Private Partnership (PPP) arrangements as well as through setting up of Special Purpose Vehicles (SPVs). Such projects would typically involve long term contractual arrangements. Such contracts will also therefore involve the periodic reviews, re-negotiations of contractual provisions. State government would need to have permanent mechanism in place to handle these complex and varied matters.

4.6.25 **Ecological sensitivity and environmental concerns have emerged very importantly in the public debates and discourses, and rightly so.** This entails costs entering into the cost-benefit analyses of any developmental projects that need to be explicitly accounted for. Thus, environmental policies need to be delicately calibrated with growth objective. This means that,

while retaining the essential logic of legitimate and crucial ecological concerns, care should be taken to see that they are not anti-development. Thus, Maharashtra should follow a "green growth" strategy (with the ring fencing caveat elaborated elsewhere in the report) and thus, protect sustainability while enhancing livelihood capabilities. In particular, Konkan region and Vidarbha region have very different composition of environmental ecological resources. In both these regions, very large numbers of thermal power projects are expected to be operative in coming decade. They need to be efficiently closely supervised and implemented with the least pollution technologies. Not only this but the principle of 'ring fenced compensation' needs to be applied. In the same vein, a similar principle of ring fencing resources for the specific regional/local development needs to be adopted. The two other such cases refer to treatment of royalty for minerals that are extracted and the carbon sinks maintained due to forests. This is yet another dimension of our approach for mitigating the inherent forces that create regional imbalance. Similarly, in the coming decades, the growing urban regions in Maharashtra will be facing severe problem of solid waste management and sewage treatments. Across the regions, the nature of the environmental problems and the size of resources needed to deal with them are likely to be very different. Although we do not treat this explicitly and in detail in this report, we flag this as an important issue for the future that has a potential for creating imbalance of a different variety.

4.6.26 Maharashtra is a big state and contains great deal of variety across taluka, districts and regions. Each of them has their specific features. In such circumstances/conditions, policies premised on 'one-size fits all' are bound to fail. Nature and magnitude of the diversity in social-economic conditions necessitates effective and meaningful decentralization. In our view, the backward regions definitely need positively favorable treatment. In our understanding, backward regions include the virtual or imaginary regions such as tribal and drought prone water scarce regions. Both plan as well non-plan resources have addressed the issues of inter-regional as well as intra-regional variations.

The approach that we have advocated implies a shift in the paradigm of policy designed and governance. The indicators and instruments that we have proposed are as few as possible. State level policy making should be least involved in micro details of regional planning. In order to provide greater flexibility and relative autonomy for regional planning and strategy, we have recommended broad formula based floor levels for major sectors.

The perceived alienation of population of the deprived regions from the government should be addressed. ***Only genuinely decentralized democratic governance would help reduce the present political gap between government and public. Therefore, we emphatically suggest that the Government of Maharashtra must adhere to the letter and spirit of the 73th / 74th amendment. The constitutional provision of State Finance Commission must be honored and followed in true spirit. Same level of commitment and sanctity which is accorded to Union Finance Commission the recommendations be accorded to State Finance Commission as well.***

Finally, the ability of each society to prosper on the basis of its own resources also depends on the political and institutional capacities. *If the political leadership and social entrepreneurship is*

not equally alert, prepared and organized, then the same set of policies and same quantum of resources are likely to produce vastly different outcomes. It is important to underscore that in steering the sources of growth and development the role of political leadership, private sector initiatives and people participation is extremely crucial. Reduction of socio-political disparities cannot be accomplished with the government policies alone. In the near future, the role of private sector and popular awareness about nature of opportunities will assume greater significance. Success of government policies and efforts should therefore consciously elicit and stipulate the necessary support from the society at large. There are many areas of and forms of public private partnership. Notably, technical education, health, different emerging segments of knowledge economy will have to be further harnessed through different modes of public private partnership.

The institutional pattern and arrangements that we have suggested in our chapter on 'Governance' are aimed at bringing the government closer to the regional aspirations and provide institutional platform for the political class to articulate the regional perspective more effectively and assertively. Reform in the governance and initiative on part of political leadership and institutions must go hand in hand.

4.7 Resource Mobilization for Achieving Regional Balance

4.7.1 The economic strategy and institutional-cum-policy reforms that we have advocated will require conscious effort by the State government on various fronts. However, most of such efforts would need adequate resource mobilization and financial strategy to realize the goals. We have made every effort to ascertain the macro-economic and financial viability of our suggested strategy. We have been somewhat conservative and cautious in making the necessary estimation. For example, while forecasting the revenue receipts, we have assumed lower attainable growth rate and expenditures estimates are prepared with higher growth rate than usual. We have also taken into account the future large size contingencies such as the next two 'Pay Commission recommendations based revisions to salaries'. At the same time, we have taken every caution to adhere to FRBM and fiscal prudence norms: e.g. while estimating potential resource mobilization through loans, we have kept the borrowing limit at such levels, so that the total gross borrowing does not exceed 17.5 per cent of the GSDP which is well within the stipulated limits. We are, therefore, assured that the suggested fiscal strategy aimed at removal of regional imbalance will not result into any shock and disturbance to the functioning of the state's economy. On the contrary, we are sure that there will be enough headroom available for allocations, especially in the later part of the period upto the XIVth FYP. Suggested fiscal strategy will provide the decisive big-push effect and maintain the state's economy along higher growth trajectory. In the following sections, we provide a brief outline of the required resource mobilization and the contours of fiscal discipline that lie beneath the suggested course.

4.7.2 The Gross State Domestic Product at current prices for 2011-12 is at around Rs. 12 lakh crore. GSDP growth rate at constant (2004-05) prices for 2011-12 dipped sharply to 7.1 percent from 10.2 percent in 2010-11 limiting the overall growth rate in the XIth Five Year Plan to 8.1 percent. As against this, GSDP growth rate during 2012-13 is around 7.1 per cent. Revenue receipts for 2012-13 were initially stated to be of the order of Rs.1, 37,000 crore. However, due to some

improvement in performance during the year, the revenue receipt estimates were revised upwards and actual receipts were expected to be a little over Rs. 1, 44,000 crore at the time when information was given to the Committee. In the year 2013-14, the State hopes to collect Rs. 1, 55,987 crore and will be able to meet the increased expenditure demands from various sectors. The State has been able to meet the stipulations of the XIIIth Finance Commission. Further, net borrowings in the year have been restricted to only 1.6 percent of the GSDP.

State's future financial position will be a key factor in ensuring balanced development. So far, the performance of the state in maintaining fiscal discipline has been noteworthy. This has certainly resulted in a comfortable position, as far as borrowing capacity of the states is concerned. The committee has done an in-depth analysis of the financial position, both present and future, and we are satisfied and convinced, that the resources required for meeting all the developmental proposals as per our recommendations, during the current five year plan and the next two five year plans, will be available with the state. The greater challenge is going to be to ensure its efficient use.

- 4.7.3** Thus, having gone into the economic and financial position of the state, the Committee has worked out the resources position till the end of XIVth Five Year Plan, with certain very safe and conservative assumptions of growth rates. This has been done for various types of revenue of the State on the basis of historical data of previous ten years available with the State Government.

In working out/estimating the overall resource envelope for Maharashtra over the next two and a half plans we have been quite conservative as we have been careful. The assumptions we have made of underlying component wise growth rates (both on the revenue and expenditure sides) have been grounded in recent historical trends and have been further trimmed or inflated in a conservative fashion. At the same time, we have also taken into account the resource requirements (sector-wise demands). We are quite confident that we will be able to fit in the sectoral resource requirements emanating/arising out of the expert studies as translated in our recommendations and that they will add up to and fall well within the estimated overall resource envelope allowing us to attain the specific sectoral objectives within the given time frame. The entire year wise resource projection up to 2027 and the Plan Fund availability till the period up to the end of the XIVth Five year Plan are made with conservative assumptions and can be seen at Annex 4.1. *We are confident that the actual revenues will exceed the estimates since with GST roll out the State will gain, further the possibility for increasing borrowing whilst remaining within the parameters of FRLs exist and finally, better governance will enable the State to bring in greater Central government resources via CSSs.*

- 4.7.4** Thus, the resource envelope has been estimated with rather conservative underlying assumptions providing comfort and headroom for unforeseen contingencies as well as normal 'business as usual' activities apart for a limited political play. The total resources for the next two plan periods, apart from the current one, add up to the tune of around Rupees 23-24 lakh crores at current prices. In the remaining period of the XIIth FYP the state would be able to allocate around Rs. 2,17,000 crore. Similarly in the XIIIth & XIVth FYP period resources available for the Plan funds would be of the order of Rs. 6,70,000 crore and Rs. 14,80,000 crore. We have tried to match the resource availability with the departmental/ sector-wise demands emanating from

individual chapters. We have also tried to check for temporal consistency of resource implications for doing what we have recommended along with priorities and time frame. We have also (to anticipate the next section) tried in our approach to provide some floors vertically for sector-wise allocations as well as spatial minimum percentage allocations so as to avoid elite capture in its varied forms, while at the same time not tying up everything completely formulaically keeping the sanctity and value of participatory democracy and the crucial role and play of the elected representatives and legislature intact. The details of the resources required as well as the details of allocation formulae (including the assumed/ recommended floor levels and the data underlying the components of allocation formula) are provided in the Annex 4.2 to Annex 4.7 and sectoral as well as allocation patterns are shown in Annexes 4.8 and 4.9 in flow charts. The resource requirement projected for each sector (with inflation assumed at 5% p.a.) has been rounded off and we have projected a total requirement of about Rs. 16 lakh crore. Plan wise breakup would be nearly Rs. 1,90,000, Rs. 5,12,000 and Rs. 8,43,000 crore respectively for the remaining XIIth FYP, XIIIth FYP & XIVth FYP (Please see Annex 4.4, col.11).

4.8 Indicators For Restoring and Sustaining Regional Balance

To recap, our strategy for studying regional imbalance entails a two track approach essentially based on outcomes. The first track identifies the development constituents or basic public goods which are sought to be equalized across the population in a normed sense. The second track again works broadly on the earlier variables, but views them as investible items rather than as consumable ones and provides a strategy for creating a supportive infrastructure that would accelerate growth in the backward regions. The indicators, therefore, are essentially captured in the following group of sectoral variables:

1. **Water:** Drinking water & basic livelihood (140 lpcpd) secured with storage and conveyance in the first track and water as a productive resource in the other (irrigation/water-shed).
2. **Education:** Literacy and RTE+ in the first track (i.e. literacy for all focusing on tribal women and right to Xth standard education to all) and vocational or skill development in employable traits, and excellent University education in the other track (including medical education (access and affordability)).
3. **Health:** Basic health care outcomes for all and Universal Health Care in rural areas for bottom eight districts in the first instance.
4. **Connectivity:** Village road connectivity in the first track and State and National highways, railway network, hinterland to port connectivity, large intra-regional road projects, airports, port development and broad band connectivity in the second track.
5. **Power:** The residential consumption leading to complete household level electrification is in the track I and sufficient electricity for productive purposes (agriculture, industry, commerce) in track II.
6. **Law, Order & Security:** The policing and minimal crime ensuring safety in terms of life and property as a development constituent. Specially focusing on the Naxal hit tribal areas.
7. **Credit:** Availability of easy credit for viable projects in the track II mode.

8. **PCI:** Per capita income is perhaps the most important indicator. Apart from reflecting the inter regional inequality, it is highly correlated to other variables such as HDI (which we avoided for the reason that there was insufficient statistical variability and its inclusion would involve double counting of health, income and education) and is in some sense a sufficient statistics.

It is important to note that, 'Health along with Law and Order' appears only in track I, while 'Credit' appears only in track II as far as we are concerned, although there are clear implications of the corresponding extensions (of each variable) in the other track. Thus, we could consider well-being of industry as being complementary to the hospitality and tourism industry in track II and microcredit or composite credit (for poverty amelioration/ survival) in track I are both illustrations of what we have not considered as being germane to our enquiry. Further, although we have considered law and order variable in our allocation formula (to anticipate) and have merely assumed that, since it is not in our reckoning, a matter of resource limitation, we have implicitly hoped that continued efforts to focus efficiently on this issue will do the job adequately.

4.8.1 The above considerations inform our allocation formulae/ computations. In creating the formula (as discussed below), we have not considered the two tracks separately. Also we have picked up certain variables pragmatically (largely on the basis of availability of reliable and consistent information/data) as they were close proxies for each of the above indicators. As far as the priorities are concerned, the discussion in the individual chapters will provide a discussion but at the general level. The track I or development constituents are clearly priority number one. Of course, this does not mean that the track II initiatives will be taken up later in a temporally sequential manner. Indeed, we fully expect that apart from the initial short transitory period all of what we are suggesting could and should be done within the given time frame and we have taken utmost care to see that all that we are recommending is indeed doable.

4.9 Allocation Formulae and Computational Procedure

For the purpose of understanding the allocation formulae and computational procedure we advise the readers to refer to Annexes 3.2 to 3.9 and Annexes 4.5 to 4.9. For Illustration we have assumed total plan resources of Rs. 65,000 crore in any particular year sometime in future (This figure of Rs. 65,000 crore should not be constructed as the recommended plan size of 2014-15. This is only for illustration). We have taken the plan resources as our beginning point. The first charge on this (constitutionally) is that of SCSP and TSP. Here the present levels of allocations are 10.2% and 8.9% respectively of the total available plan resources, but may be slightly different given that the proportions will now be determined by the Census 2011, a call which the State will have to take.

The next charge will be for water sector plan for which we recommend keeping aside a fixed 30% of the plan resources available after subtracting SCSP and TSP allocations (Please see the illustrative example at Annex 4.7 especially figures at A, B, C, D, & E). This will be for all water sector development (Including Water Resources, Drinking Water & GSDA, special and stressed areas, Water Conservation, and CADA) on a divisible basis as is being proposed by us and is mentioned later in this chapter. Should this be found to be insufficient for any reason in any particular year the Non divisible portion of the plan resources are always available and the State will have to take a call keeping in mind the requirement of all sectors. Given the centrality of 'water', its contentious and sensitive nature, it was felt that this was

prudent thing to do, so as to underline the importance of State's responsibility in closely overseeing and ensuring delivery on this front to the integrated State as a whole. We, therefore, have a separate allocation formula for water sector. *Given the nature of issues related to 'Water', the treatment has been somewhat 'hybrid' in that we have had to take fair judgment calls looking at the needs, as well as apply formulaic methods where possible. This admittedly inelegant (but more fruitful) approach is a demonstration of our tenet, 'one size does not fit all' at the micro level.* We also recommend certain fixed levels and some floor levels for the water sub-sector allocation certainly for the 12th five year Plan period, so as to tackle the acute problems speedily and post a review may be done away with or suitably modified later. These levels are as follows:

4.9.1 8.5% (See 'R1' at Annex 4.7) of the state level divisible water allocations so arrived at as mentioned above, to be allocated for the special areas in the following manner for the next five years.

- (a) 27.3% of the 8.5% special provision for the water stressed talukas defined as those which have been (i) receiving less than 750 mm rainfall (ii) requiring water supply by tankers, in at least three years in a span of preceeding 10 years (iii) having *Annewari* less than 50, in at least three years in a span of preceeding 10 years and have also (iv) been having less than 30% irrigation (See 'S' at Annex 4.7). At present there are 44 such Talukas across the regions.
- (b) 26.3% of the 8.5% of the state level divisible water allocations so arrived at as mentioned above for the treatment of '*BhustarPratikul*' talukas numbering 85 (See 'T' at Annex 4.7).
- (c) 8.2% of the 8.5% of the state level divisible water allocations so arrived at as mentioned above for '*Kharpan Patta*' in Amravati requiring special attention for drinking water (See 'U' at Annex 4.7) and
- (d) 38.2% of the 8.5% of the state level divisible water allocations so arrived at as mentioned above for '*Maji Malgujari Talav*' (MM Talav) specifically for Nagpur for irrigation and fisheries development (See 'V' at Annex 4.7).

4.9.2 After taking care of these, the remaining resources should be used for other purposes (four sectors mentioned below) for regional level water sector plans. The Regional level water sector allocations are for four sectors namely, Water Resources development, Command Area Development, Water Conservation, Drinking Water including GSDA and Sanitation. The floor levels recommended by us are 50%, 8%, 10% and 12% for these four sectors respectively leaving 20% to be allocated to any or all the above sectors. The allocation principle is derived by development deficit of water and drinking water deficit computed at regional levels with 50:50 weightage respectively. All of the above regional level water sector plans will lead to regional level allocation for water sector at the rates of 35.26% for Vidarbha, 21.59% for Marathwada and 43.15% for RoM. To this must be added the additional resources required to take care of the acute/special water problems as mentioned above in para 4.9.1 to derive the overall regional allocation of (water related 30%) resources. These work out to 36.68% for Vidarbha, 20.83% for Marathwada and 42.49% for RoM. For further details along with the underlying analysis, please see the 'Water' chapter and the detailed working of allocations given in the Annexes 4.6 and 4.7.

4.9.3 The plan resources (after deduction of SCSP/TSP/Water) should normally be divided into divisible and non-divisible components in the ratio of 60:40. However, 60% of divisible funds here are to be understood as the base or floor level recommendation. This is believed to be reasonable because we have kept water out (which will also have a divisible component) and have also recommended some big ticket projects that are inter regional and will require resources. Hence the State may derive comfort from the approximately 40% remaining available at the State level . We have also provided for stricter/ transparent interpretation of divisible items in the budget. At any rate this (60%) is a base/ floor level and should be reviewed by the government periodically by a mix of senior officers of the government and independent experts/agencies. The same expert group should also review the requirement of special area provision as indicated in para 4.9.1 and the weightage to drinking water deficit and development deficit (which is being recommended as 50:50 in para 4.9.2) at the end of five years. We shall now turn to the allocation formula to be **applied to the divisible pool**.

- 1 We begin by entering a caveat upfront. Given the multiplicity of issues that we are engaged with, the allocation formula has to perforce involve several variables and an index being of a composite nature. This means that, the weights that are assigned in creation of the index as well as overall are inherently heuristic. The process of reaching the final agreeable formulation, therefore, perforce is iterative and aimed at achieving fair and implementable outcomes and their acceptability to the committee members and more importantly to the policy makers and the stakeholders at large. This process, therefore, was informed by careful consideration of all the relevant facts and our judgment of feasibility.
- 2 In choosing the indicators that went into the formula, there were several considerations. First, they had to be consistent with the 'two tracks' in our multi-dimensional approach that we have elaborated upon earlier in the chapter. Second, whereas theoretical considerations and nuances are fully reflected in the discussions and multiple dimensions of our recommendations, in the specific task of constructing a formula we needed to pick out those outcome indicators for which reasonably reliable and consistent data base and data collection and reporting mechanism were already in place. Third, the statistical or technical criterion: that the indicators chosen had to be reasonably variable and also not collinear with some of the others (Urbanization got dropped for such reasons). Fourth, which partly goes with third was the 'Occam's razor' or the 'parsimony principle'. We were comfortable with the above especially since the formula only allocated resources regionally (i.e., the allocation coming from a particular indicator was not tied to sector-wise expenditure) and the use of what to do was recommended through the other means (such as specific projects, sector-wise floors etc.)
- 3 The indicators that we chose finally for our allocation formula were: Population, Development Deficit or Gap, Per Capita Income and Area . Before turning to the explanation of each of these indicators and how they were normalized to extract the distance (which positively entered the formula) we turn to an important aside and a recommendation arising out of it.

It was felt that an important aspect of good policy design is to have incentive compatibility

aspect integrally built into the allocation mechanism. This concerns the delivery mechanisms and processes that transform allocations and expenditures into outcomes. For want of a better word, we thought of calling it 'Governance'. We believe that, all other things being the same, better governance (at the regional level) needs to be taken cognizance of and rewarded (if for nothing else than to thwart perverse incentives). However, we did not have such an index (which was robust and generally acceptable) currently available. We, therefore, recommend that Government through some expert group should be asked to construct such an index in the near future and at the time of revision of the formula, it should be included as an indicator with a reasonable weight.

4.9.4 Getting back to the description of the indicators and allocation formula (note that Mumbai is excluded in the computations). We advise the reader to refer to Annexes 3.2 to 3.9 as well as Annex 4.5.

- 1. Population:** This is a natural indicator to be included (supported by the Nagpur Pact) and since we expect that over a period of time (as the expected outcomes come about) all others will reduce in variability and the formula will gravitate towards being overwhelmingly dependent on population. The way this indicator enters the formula is straight forward. The proportions of regional populations are computed (they naturally add up to unity) and the overall weight assigned to this indicator is 45% which incidentally is a sharp decline from the current formula that assigns a 100% weight.
- 2. Development Gap:** This is a composite index and consists of development constituents as well as supportive infrastructure elements. This is a crucial indicator capturing the relative regional imbalance and the Committee's focus is on mitigating it and finally removing thereof. This composite index comprises five components each entering into the index with an equal weight of 20%. The overall development gap index then enters the allocation formula with a weight of 25%. The five components with equal weightage of 20 % each have to do with connectivity, education & skill development, health, credit availability and power. Connectivity weightage is calculated on the basis of road and rail density (per 100 square kilometers) of the districts aggregated at the region level by computing the distance from the average of top 3 districts in the State. Road and rail densities have been given 70:30 weightage for computing the overall weightage of connectivity. Similarly, district wise SSC students registered and ITI intake capacity, separately aggregated at the regional levels are compared with the respective averages of top 3 districts in the State and the deficits are computed. Weightages given to the SSC students registered and ITI intake capacity for computing the overall weightage of education and skill development, are again in the ratio of 70:30. This way we arrive at the overall development gap index which is used for computing the regional allocation proportions. There has been some elaboration about their importance in the earlier part of the chapter. Here, we have explained the sub components along with the weights and manner in which they enter the final allocation formula.
- 3. Per Capita Income (PCI):** This is an indicator that correlates well with almost all other development indicators including urbanization and HDI. It is a very crucial outcome indicator. It enters the formula as the distance of the regional Per Capita Income from the

weighted average of the Per Capita Incomes in the top three districts. We may mention here that this computational methodology (distance of the weighted average of top three performing districts in the State from the district performance appropriately aggregated to the region) is uniformly followed for all the other indicators measured where deficits are involved and hence distance is used. The indicator PCI enters the overall regional allocation formula with a weight of 20%.

4. **Area:** This enters the formula again in a manner similar to the above. Provision of access to basic public goods as well as supportive infrastructure depends, at least marginally, on the area where it needs to be provided (even accounting for economies of scale). The indicator has the weight of 10% in the overall regional allocation formula for sectors other than water.

4.9.5 For the purpose of absolute clarity we once again summarize the method of computation of the development gap and explain as given below (Please see Annex 4.5)

1. **Connectivity:**

The indicator here is made up of two components. One is the road density and the other is the rail density. In both the cases, we have considered lengths per 100 square kilometres as a normalizing factor. The basic unit for computation is the district from which it is aggregated to the regional level. The distance is then computed from the average obtained from the top three districts. The distances so obtained for the regions are then converted into proportions. Thus, we have two sets of distance proportions; one for roads and one for rail. These are further aggregated by weighing them with 70 and 30 % respectively. The connectivity distance proportions so obtained are then plugged into the development deficit index with a weight of 20%.

2. **Education & Skill development:**

Here too, the indicator is made up of two components. These are the average (over two recent years) number of students registered for SSC and the average intake capacity for ITI. The method of computation is '*mutatis mutandis*' as in the case of connectivity with the SSC and ITI related distance being aggregated by applying weights of 70 and 30% to obtain the region wise proportions which then enter the development deficit index again with a weight of 20%.

3. **Health:**

Various health outcome indicators were considered by the Committee. Using the parsimony principle a few of these were finalized and a composite score for the districts was computed. For detail, please refer to the chapter on 'Health'. With a single series of numbers available for calculating the distance again the earlier method was applied (even more simply) *mutatis mutandis*. Here again it has a weight of 20% when entering development deficit index.

4. **Credit Availability:**

This indicator is normalized at district level as rupees per hectare. Once this series across districts is computed, the further computation of proportions at the regional level, to enter

the development deficit index is *mutatis mutandis* as in earlier cases. Also, the indicator enters the development deficit index with a weight of 20%.

5. Power:

This indicator (again enters both from the development as well as growth side as explained earlier) is computed by taking average of per capita electricity consumption at the district level. The regional proportions are once again computed *mutatis mutandis* as in earlier cases. The weight for the indicator in the computation of development deficit index is 20%.

Thus, the allocation formula applicable to divisible pool (base 60%) of the plan resources after deducting proportions for SCSP/TSP/Water (as noted above) will yield the proportions in which the resources will be allocated to the three regions. These proportions are 30.78%, 28.51% and 40.71% for Vidarbha, Marathwada and Rest of Maharashtra regions respectively. We will need to consider/'add' the final water sector proportions of regional allocations (along with the special issues provision for water) given above. This will result into the the grand proportions of regional allocations from the plan resources under the 371(2). These will ultimately be 33.24%% for Vidarbha, 25.31% for Marathwada and 41.45% for RoM presuming that the remaining allocations made above the various floor levels are also at the same rates (Please see Annex 4.7 Part IV). If, however, the Government decides to allocate more from any other source such as the Non-divisible funds etc the extents will differ slightly but that is the prerogative of the State. The funds, so allocated, will form the basis of regional plans which will be put together under the restructured regional governance schema recommended by us (see the 'Governance' Chapter). In order to be consistent with our other substantive recommendations (including strengthening of decentralization), we have proposed some further bases/floors for regional plan allocations. These floors/bases are for the district and block level plans (to be allocated by the regional level boards) as well as for sector-wise (at aggregated regional level) to carry out our proposals amongst others. Thus, we propose a floor of 30% for the District Planning Committees (DPCs) out of the regional allocations (Other than water), with the proviso that the amounts may not be equal across districts and a suitable allocation formulae for DPCs with weightages to Area, Population and HDI may be evolved. However, in order to achieve equity amongst the districts in a region, each region should evolve formula on the lines of the formula suggested by the Committee for distribution of resources to the regions. For talukas we propose a similar 30% floor from the regional allocations (Other than water), with the proviso that resources may not necessarily be equally divided between the Talukas. Further, pooling of taluka and district resources may be permitted with the proviso that, as far as practicable, all the sectors may be provided for. We consider only the relevant and important sectors for this exercise. The sector-wise floors are to be kept at Connectivity (20%), Agriculture & Allied activities, including ADF and Cooperation (15%), Power (8%), Health (11%)) and Education (11%). Clearly, this is meant to safeguard uniform sector-wise development (avoid weak sector being eliminated) and yet, provide 35% of resources to the regions for overall planning. These sector wise floor levels are to be checked at the regionally aggregated level. In other words DPC and blocks are not required to observe the floor levels in each sector. If there is a shortfall at the aggregated regional level then only the RDB should allocate more to that sector any where in the region to achieve the minimum floor level.

4.10 Review Caveat

The report recommends a package that must be viewed in a holistic manner. We have held that allocation of public resources (especially in the changed macro-economic ethos) is not the most important thing and that the other strategic elements in the package such as governance and policy reforms are rather more important. The fact is that, the allocation formulae integrally belong to the comprehensive deal. Given that these formulae are based on our current reading of the situation and the fact that our approach is outcome oriented, as time goes by these formulae will need to be revisited and a mid-course correction applied based on the actual changes in the outcomes as well as other learning over a period. The Committee's choice of the weights in our allocation formulae were decided in a heuristic manner that took into account, inter alia, the contemporary development challenges of our State. As these will change in future the allocation formulae will need to be adjusted. For example, it is possible to expect the relative weight of Population variable will be higher over time as the regional disparities will begin to get corrected while as mentioned earlier there will be a need to give an appropriate weight to the "Governance" variable so as to incentivize regions towards better use of resources. We thus propose that, an in house Committee (*with at least a few independent experts in the composition*) be set up to **review** the recommendations and the details and suggest suitable modifications *not later than every five years*.

4.11 Flagging An Emerging Issue: Urbanization

4.11.1 As we finish with the report, there are some emergent issues that we need to take note of. In the context of ecological and environmental-sensitivity and concerns, the treatment of minerals and forest, and the whole issue of development and growth will be circumscribed by a new parametric environment. We have dealt with this in some detail in our chapter. But the other important element of the emerging parametric environment that we have almost completely ignored (except in terms of water requirement) is the process of urbanization. We hence flag some of the relevant issues in this brief section, with the hope and wish that these would be taken up seriously and in detail by the committee that will review our recommendations in the near future (see the review caveat). The process of urbanization has always been synonymous with industrialization and more generally, with economic progress and development. Scholars have extolled the virtues of urbanization and located its strength in the education, knowledge and innovation, thus locating the urban advantage not so much in the morphological characteristics but rather in the associated mind-sets of those who populate the urban spaces. The cities have been built by the locals as much as by the migrants. Maharashtra which was always urban in relative sense is recorded at around 46% (Census 2011). In reality, Maharashtra in fact is even more urban than the figure suggests because there appears to be concerted effort (for political reasons) to under estimate this process. ***Whilst urbanization is a positive process, it brings in its wake a slew of challenges and issues. Failure to recognize these and take appropriate measures to mitigate them will result in the creation, perpetration and augmentation of a whole new imbalance in the State with political, social and economic consequences.***

4.11.2 The nature of urbanization in Maharashtra as indeed in India is of a peculiar kind. The new census towns (yet not administered by Urban Local Bodies) are on the rise and spatially situated around the core which is a big city or a metropolis. This naturally leads to a skewed spatial

development of urban places within the landscape of the State. Thus, about 25% of all million plus cities in India are located in the Mumbai-Pune-Nashik triangle (which is incidentally in Rest of Maharashtra or RoM for short). *Indeed, there are around 130 talukas or blocks in the State that have no city/ town or urban space. These overwhelmingly belong to Vidarbha, Marathwada and Konkan regions.* The extent of urbanization correlates well with Per-Capita Incomes in the regions and lack of it is congruent with backwardness.

4.11.2.1 As Maharashtra develops through leveraging the specific spatial comparative advantage and hence giving fillip to industrialization (it was once known as the 'industrial power house of India'), strengthening of services or tertiary sector and through harnessing of agro-based value additions and generally adoption of 'new agriculture', more off and non-farm jobs will be created leading to reduction in the number of people depending on agriculture as well as reducing disguised unemployment, it will also perforce lead to accelerated urbanization. If a greater proportion of a growing population has to be accommodated in urban spaces, then we are roughly talking of accommodating at least 20 million more urban habitants in the next 15 years. This is a big number and will clearly bring with it a number of challenges. It needs to be understood that people will migrate and populate the extant cities and towns and also create new ones. Further, as Maharashtra urbanizes, we need to avoid the imbalance that will emerge between urban and rural spaces in terms of public goods provisioning as well as standard of living. Thus a *major policy initiative (PURA like) will have to be undertaken to avoid sharp dichotomy between urban and rural spaces in terms of public goods provisioning so that they become a seamless continuum.*

4.11.3 In any case, huge amount of resources will need to be invested for infrastructural needs to these new city slickers. New cities apart, even the existing cities are currently underserved and call for substantial amount of investment in infrastructure. ***These comprise of Urban Transportation systems, Water and Sanitation systems, Health and Education systems, Political and Administrative systems and Housing and Shelter programs are some of the more important ones that will have to be tackled within the 'green sensitivities and constraints'.*** While the magnitude of investment to provide these will be rather large, the good news is that cities and urban spaces by their very nature are vibrant fountainheads of economic progress. Hence, *the resources required will not be in the nature of aid, but when the underlying projects are properly designed, they will be bankable projects that will pay for themselves.* This applies to private players, but also importantly to higher level of governments. Not only is the contribution or urban spaces to the State and National domestic product overwhelming, the tax dividend that accrues to the State as well as National government too is proportionately large.

4.11.4 It is well established that the so called 'Decentralization Theorem' holds. This requires strong local governments following the precept of 3Fs (Functions, Functionaries and Finance). None of this prevails in India or indeed Maharashtra. Barring exceptions of less than 10% of the ULBs in Maharashtra (i.e., the Municipal Corporations) the rest of the 280 odd ULBs are weak and barely

enjoy any autonomy (whether it has to do with revenue handles, base and rate setting for taxes and hence expenditure autonomy). Despite the 74th Constitutional Amendment, ULBs continue to be treated as creatures of the State. ***Given that GST is set to roll out, it will give relief to the states as well as the local bodies thereby making possible autonomous and empowered ULBs leading to ownership and better management of cities.***

4.11.4.1 The administrative set up is weak too and not necessarily subservient to the relevant city's interest or needs in the primary sense. The elected councilors and the mayor have a debating role but the executive role is firmly with the bureaucracy. The governance conundrum is characterized by a crazy quilt pattern with overlapping jurisdictions and crisscrossing authorities, thanks to the State and Central parastatal entities. There is very little participatory democracy at work leading to efficient outcomes; rather one notices an abundance of political patronage based delivery. Here a ***directly elected mayor*** will help a great deal.

4.11.4.2 In **metropolitan** agglomerations/ areas, there is an additional emerging issue of the appropriate level of government that is being currently debated. There are arguments based on functional, efficiency and democratic decentralization considerations that contest with each other. Perhaps a pragmatic approach will have to be worked out to set up an ***elected mayor at the metropolitan level reaping economies of scale, but with limited functional jurisdiction.***

4.11.5 One of the first issues that require urgent attention is the one related to getting efficient land markets going. Rapid urbanization is going to require great deal of land and this entails both, conversion of non-urban land as well intensification of urban lands. Once this is done then one can build on it to work towards extraction of land values (monetization) at least of public lands for raising resources so necessary for providing infrastructure. The traditional urban planner's apparatus borrowed from the 'north' will not work for us. The fluidity and accommodativeness of the real socio- economic processes will have to be intrinsic and will thus constrain the detailing of such plans which will not be restricted to the idiom of the technical urban planner, but will have to borrow from the tool kit of the social scientist.

4.11.6 At one remove, this will lead to better and less restrictive policies related to FSI and TDR that have at once strangled the real estate markets and created asset bubbles rendering sky-rocketing prices beyond the pale of the ordinary citizens. Such policies must be reformed, so as to derive solace to the very poor and middle classes, who at present, must be deprived of **affordable shelter** in our cities. Thus, affordable housing that is publicly provided or enabled is absolutely necessary if one has to avoid the 'slums and related problems' that currently confront cities of Maharashtra. There are many policy reforms like the inclusive housing or *modification of the rent control act* amongst others that have been tried elsewhere need to be urgently addressed, so that at least in the new cities we don't land up with the same issues.

4.11.6.1 No less important will be the crucial issue related to provision of water for urban

citizens. Of course, the water is required for industries and services too. The fact is that properly managed (recycling norms) the quantum of water so required is quite a small proportion of the total water used in the State. Of course *rational water pricing as well as well-regulated water markets will be central* to this. The equally critical related issue (especially in urban areas related to water) has to do with *liquid waste management with solid waste management* not far behind. This requires no insignificant amount of infrastructure (physical and resources there for). Again the good news is that many of these projects with the help of newer technologies and optimal pricing can be transformed into bankable projects and thus, of interest to the private players or at least available for PPP treatment with viability gap funding. The fact needs to be underlined/ reiterated that this is not aid but investment that cities will certainly be capable of paying for over a period of time.

4.11.7 Thus, recognizing the imminent need to manage the huge urbanization is not just prudent but absolutely essential. Resources apart the need is to get into a mode of serious and pragmatic policy reforms because if we fail to do it we will have to deal with entrenched informal system within the framework of political economy that is unbridled simply, because it operates with its own protocols but beyond the 'shadow of law'. This leads to severe welfare costs and is detrimental to developmental efforts.

For Maharashtra, the policies must be aimed at not just encouraging/ enabling urbanization or city growth but transforming existing ones and creating new ones that are smart cities, so that we can contend with the challenges of global setting and best help with the development and growth processes. ***These smart cities must optimally leverage the use of ICT, must be repositories of skills and knowledge and be instrumental in creating further knowledge and skills through creation and nurturing of vibrant higher educational institutions. These cities must have rich cultural ambience that is also eco-sensitive (without being anti-development) and build upon the heritage and identity in a functional manner. Such cities perforce ought to be compact and dense, so that we do not repeat the mistake of creating energy guzzling urban sprawls, but rather optimize on the spatial footprint and more particularly, on the carbon footprint.***

4.12 Early Actions: Quick Wins for Restoring Trust

The committee in its visits and deliberations observed a sharp and consistent theme across regions. This had to do with the 'trust deficit' or lack of credibility which the government suffers from in its perception by the people. This is not a good state of affairs and even viewed merely pragmatically, will hinder the government in its well-intentioned undertaking of remedial steps. The first charge on the government, therefore, must be to make a serious dent on this perception if not completely eliminate it. In this context we would like to flag and recommend a few immediate steps that the government ought to take so as to restore confidence and credibility in the people at large about the government. These naturally comprise a subset of our recommendations that could be taken up on priority basis. We list here the important ones:

1. Sorting the issue of *Maj Malguzari Talav*.
2. Special provisions for water (water stressed areas) including 'difficult terrain' areas.

3. Settling disputes concerning riparian rights related to Jayakwadi water.
4. Acceptance, decision and announcement of Regional Governance structure.
5. Ring fencing of green bonus, royalty for minerals.
6. Restoration of Chandrapur (recompense for degradation).
7. Solar Energy initiative for Marathwada.
8. Consider NPV costs related to forests (irrigation projects) within non-divisible pool.

4.13 Summing Up

In summing up our approach, we may say that our approach is knowledge based and empirically evidenced as well as participatory. We recognize that *resource allocation while important is perhaps not the most important* in either remedying the imbalance or indeed sustaining balance. Thus, we look at *strategic intervention in the form of policy measures and reforms, especially governance reforms*. We have looked at outcomes in estimating the development deficits rather than looking singularly at the inputs. We follow two tracks in our approach, each track being imbued with the overarching principle of ***Antyodaya*** in the temporal sense of implementation: Track I is concerned about equal access to basic public goods in a normed sense across people and regions. We have provided for floor levels for each sectoral as well as for district and block level allocations at the regional level. These floor levels are to be observed at the aggregated Regional Board Level. We are aware that unless minimum expenditure is incurred in each sector or area elite capture cannot be avoided. Track II is about growth acceleration of the backward regions. In the context of track II, our approach takes into account the regional specificities and hence recommends 'horses for courses', leveraging the dynamic comparative advantage rather than trying to pursue a single unifying principle. In short, we realize that 'one size does not fit all'. We recognize that there is no magic wand or a silver bullet, but we also believe that human capital is especially very crucial as are organizational structures of governance. Physical supportive infrastructure is important and ***even more so is the 'X' factor, comprising role of institutions and frameworks as well as social capital, which in turn, comprises entrepreneurship and socio-political leadership***.

Committee has been cautious in projecting the resources upto 2026-27. We have estimated the revenue receipts with an annual growth rate lower than the present compounded annual growth rate of the last 10 years. At the same time we have projected non-plan expenditure to be growing at higher annual growth rate than the present compounded annual growth rate of the last 10 years. We have suggested more (enhanced level of) market borrowings as we feel that the State's financial liabilities will still remain within manageable limits. This – we consider – is important for speedy completion of large projects. The additionality between columns 11 and 12 of Annex 4.4 is mainly due to suggested enhanced level of market borrowings.

We may also clarify here that the year wise sectoral as well as total fund requirements (column 2 to column 11 of Annex 4.4) should not be construed as a firm or specific recommended allocation for those respective years. They are supposed to be indicative.

Finally, in all that we have suggested, we have been particularly conscious of importance and value of participatory democracy, so we have been consciously restrained in our use of formulaic rendition

which almost always leads to an over determined system. Instead, we have provided bases/floors to allocations so as to reduce the possibilities of elite capture in sectors as well of spatial components. ***Eschewing the path of paternalistic 'computer' determination, we have naturally and advisedly (given the value we put on the virtue of democracy) allowed a play for stakeholders (including elected representatives), so that they may deliver even better results than what we expect.***



CHAPTER 5

Regional Strategies for Growth Acceleration

5.0 Introduction

Regional disparity in socio-economic development has become a sensitive issue in recent times with serious social and political ramifications. This issue assumes even greater importance in the case of Maharashtra due to various historical factors dating back to the time of formation/ reorganization of the states in the mid-fifties. The state of Maharashtra was formed in 1960 by bringing together areas belonging to Marathwada, Vidarbha, Konkan and Western Maharashtra regions of erstwhile Hyderabad State, Central Provinces, and Bombay Province, respectively. However, all the regions of the State could not achieve progress at the same pace due to several political, economic and social factors. It is difficult, if not impossible, to remove all disparities completely, may be due to natural (geographical) or inherent (cultural) differences. But it is possible and necessary to remove at least all 'man-made' obstacles, arising out of socio-political decisions or institutional constraints that stop people, regions from exploiting their comparative advantage and reaching their full developmental potential.

Balanced regional development requires growth acceleration of the lagging regions. This in turn depends on supply of support infrastructure, skill development, good governance, minimizing cost of performing business and Big Push Development capital that unleash externalities and spillover effects. Implementation of required policy reforms has a critical role to play in growth acceleration. Thus, we can mitigate the constraints, elaborate the strengths, and leverage the dynamic comparative advantage of various regions. Needless to say different regions will require different mix of policies.

The elimination of economic imbalance across regions critically hinges on acceleration of growth in lagging regions. These regions need a meaningful shift in the strategy of growth. The economy of lagging regions should adapt a development strategy which would ensure higher emphasis on more productive sector. The majority of the areas in the lagging regions depend on the traditional dry land agriculture. Introduction of new agriculture comprising water saving modes of irrigation, shifts in cropping pattern, development of horticulture etc would be helpful in reviving agriculture sector of backward areas. It would also be necessary to shift labour from low productivity agriculture to more productive non-agriculture employment. This can be achieved in an efficient manner by focusing on growth of industries and service sectors. Development of infra-structure and expansion of institutions which generate human skills would enable emergence of new avenues of dynamic comparative advantage of the region.

To formulate regional growth strategies, the committee had commissioned region wise expert groups comprising academicians and industrial experts. Their reports offered detailed sectoral as well as district wise recommendations. This chapter draws upon their analysis and policy suggestions.

5.1 Growth Strategies for Vidarbha

Income imbalances of Vidarbha vis-à-vis Rest of Maharashtra got particularly aggravated during the last decade due to (1) low and unstable growth rates of agriculture sector, (2) inadequate flows of private investment, (3) infrastructure deficit in terms of assured irrigation, connectivity and quality of power and (4) level of Governance. The 'growth strategy' will need to urgently tackle agriculture setback and exploit strengths of Vidarbha with greater resource flows from public and private sector accompanied with the necessary policy governance reforms.

Following are the major arenas that provide strength which can be exploited towards growth acceleration in Vidarbha.

- Agriculture and Agro processing Industries
- Forests
- Fisheries
- Mineral Wealth
- Industries (Textiles)
- Power Sector
- Tourism

5.1.1 Agriculture and Agro Processing Industries

Agriculture is the core activity of Vidarbha's economy, which has seen huge volatility and a considerable degree of stagnation in the recent past. Increasing assured irrigation as well as protective irrigation at the farm level will be one of the most important components of the growth strategy for this sector. Towards this, a number of actions such as expanding investment in irrigation sector particularly in Western Vidarbha, speedy implementation of pending projects, tackling problems of water sedimentation etc. would be required. In our chapter on Water Resources (Chapter 10), we have extensively addressed these issues.

The eastern part of Vidarbha mainly grows paddy whereas horticulture is very strong in the western part. Cotton and pulses are spread all over the region. However, increasing the agricultural output and exploiting the agro potential of the region would need major expansion in agricultural extension services, increase in connectivity of village and farm roads, supply of agriculture credit, and promoting value added downstream agro processing industries. Potential also exists in promoting animal husbandry, poultry and similar allied activities.

For providing stability in agriculture, it is necessary (*see* the chapter on Agriculture for specifics) that every cultivator should have at least one season of assured irrigation which would facilitate diversification of crop pattern and multiple cropping. This would provide assured livelihood even for a farmer with land holding of one hectare and thus combat the distress situations that lead to unfortunate incidences of farmers' suicides. Such a desirable condition would be realized with irrigation projects providing water to 15.44 lakh hectares of land, which are expeditiously completed.

5.1.2 Forests

Vidarbha holds 26,98,800 hectares of forest land which accounts for 53.29% of forest area of Maharashtra. Forests of Vidarbha are home to a variety of flora and fauna and attract considerable number of visitors each year.

The forests of Vidarbha are construed as non-performing assets as of now but which can be converted into economic assets, and also, as carbon sinks that are valued worldwide. Forest produce, especially non-timber products such as bamboo, can be developed into a major source of revenue for the interior villages. There is a need to encourage community based cooperative industries that would create value added products such as bamboo based furniture where there is a great deal of potential. Conservation need not mean non-utilization of the forest resource. There are legacy issues here and the Forest Act needs to be reviewed so that while keeping the inherent logic intact, it does not become a completely anti-development act. In particular, the '*Zudpi Jungle*' concept needs to be revisited. With their traditional knowledge, local people can use **these resources** for productive purposes which should be encouraged. A two- pronged strategy of conservation towards preservation of planet earth and forest (carbon) credits towards the development of the region may be the need of the hour to achieve the optimum utilization of this rare and rich resource bestowed by the nature on Vidarbha, and subsequently Maharashtra. Currently environmental services supplied by forests in Vidarbha are rewarded by Government of India through payment of 'green bonus'. However, it forms a part of consolidated fund of Maharashtra. *We recommend that this bonus should be 'ring-fenced' for the development of Vidarbha region as an additionality to the funds allocated to the Region's Development Plan.*

Agro -Forest as source of livelihood: Agro-forests in the region of Vidarbha need to be developed as a source of income earning activity. De-forestation of land and converting it into agriculture is the activity which is undertaken on a large scale by the people residing near the forest area. In some cases ownership of land was also granted to people who have encroached forest land. In order to curtail this practice, forest itself can be developed by the local people. Community ownership of forest is the practice adopted in some parts of the State. Developing medicinal plants, non-timber forests are the activities which need to be encouraged by providing necessary infra-structure and incentives. Irrigation can very well be used for developing forest land and thereby reducing the gestation period for growing plantations.

5.1.3 Fisheries

Fishery industry in Vidarbha is another sector where there is a potential for achieving growth. There is an urgent need to de-silt the existing tanks or *maji-malgujari talavs* so that capacity of water storage can be enhanced. Surplus water availability near villages of Eastern Vidarbha would encourage farmers to utilize water for fish rearing. Fisheries play a key role in the socio economic development because it is a major source of livelihood for the poor and backward fishing communities.

The fish potential of Eastern Vidarbha is such that it can compete very well either with that of the west coast or east coast. Being located at a strategic point, this produce can be used for supplying fish at least to the entire Central India which can, in course of time and with the provision of relevant logistical support and connectivity in place, lead to flourishing exports by creating

backward and forward linkages. Eventually, there lies a huge export potential which can act as a value booster to the economy of Vidarbha region.

5.1.4 Mineral Wealth

Vidarbha has always been known as the mineral rich region of Maharashtra. In fact, recent studies have shown that the Central India belt is the second largest mineral belt in the country. Various minerals such as manganese, bauxite, uranium, limestone, marble, coal, gems, mica, and graphite etc. exist in large quantities and the net extent of the minerals of the region is yet to be assessed.

The mineral resources of Vidarbha remain untapped, mostly, due to limitations imposed by Forest Conservation Act, 1980. There is a need for its comprehensive review and necessary amendments to harmonize better local development needs and local ecological concerns. Like green bonus, *the royalty earnings from mineral resources of Vidarbha should be 'ring fenced' for local area development. Also, the royalty rates should be rationally set on ad-valorem basis and periodically revised.*

5.1.5 Industry

Vidarbha holds a unique location based logistical advantage that provides a competitive edge towards the development of manufacturing sector. It possesses a comparative locational advantage, for the movement of goods and services from anywhere, to any other destination whether it is national or international. This unique advantage can be exploited by putting the requisite connectivity infrastructure in place.

The industrialization of Vidarbha can be built around textiles, agro processing, food processing power sector, logistics and tourism. These can be further supplemented with timber and forest based industries, cement, foundries, steel and re-rolling, auto spares, farm equipment, IT and ITES, mines and minerals etc. Vidarbha is one of the few regions where in Rural Agro Clusters / Agro Economic Zones can be conceived and developed around broadgauge railway tracks and National Highways. The emphasis should be on investment friendly policies to attract investment in these sectors. Apart from the important role of MIDC, this requires setting up of empowered Directorate of Industry and Trade in the region which will encourage MSMEs and other industries by improving the ease of doing business and hence reducing the transaction costs. Given the growing importance of private sector investment in promoting growth such policies will be of decisive importance in Vidarbha region.

5.1.6 Textile Industry

Although, Vidarbha is the largest cotton producing region, it has failed to attract textile units for further value addition. Textile policy should be framed and implemented in such a manner that the major players in textile industry would get attracted to Vidarbha. Currently, there are a number of ginning and pressing units located here, which produce cotton bales that are sold to spinning and weaving mills, mainly in Andhra Pradesh and Tamil Nadu. As a result the further downstream units for knitting, dyeing, garments etc. are also located there.

The present status of the industry and suggestions for its improvement are as follows:

1. Recent data after declaration of New Industrial Policy indicates that this sector can attract an investment of around Rs. 5,000 Crore in Vidarbha. To achieve this, the present scheme of interest subsidy and technological up-gradation fund scheme requires modifications at the State level.
2. Vidarbha has the largest acreage under cotton cultivation and poorest yield. This anomaly can very well be arrested as an outcome of the new policy. Under the new policy, a farmer can directly sell cotton to ginners. Once large spinning and weaving mills are set up, they can enter into contract farming, and thus give technical and financial support /inputs to the farmer, right from soil testing to sowing and harvesting to better his yield and benefit from incremental gains. However, this must be supported by two important initiatives from the Government :
 - (a) Enforceable Contract Farming Act.
 - (b) Encouragement to small acreage holders to pool together their holdings, to form a 500-1000 acres bank, so that the contract buyer is able to establish the necessary support net work. This will further be helped by creation of template for model contract and abolishing any stamp duty payable for entering into such a contract.
3. Spinning and weaving mills are harbingers of knitting, dyeing, and garments industries in the value chain and the Government of Maharashtra should encourage development of the SMEs in clusters strategically situated.
4. Power is one of the main inputs for spinning and weaving mills. Vidarbha is getting 26 new power plants and it is suggested that the Government of Maharashtra should give power to these textile units at differential rates which are competitive compared to spatially contiguous regions and opening up export opportunities particularly for high quality yarn.
5. Adopting high tech processes for de-lint ginners should be made eligible for the already existing Technology Upgradation Fund.

5.1.7 Power Sector

Vidarbha is a major net power producer of the country. Out of the installed capacity of 10,100 MW in Maharashtra, Vidarbha contributes 5,600 MW (55%). As far as energy generation in million units is concerned, Vidarbha contributes around 53% of the total quantum. Consumption of energy in the State is 16,143 MW (2010-11) as against 2,000 MW (12.4%) in Vidarbha region. The per capita electricity sale for Vidarbha in the year 2010-11 was about 65% (502 units) of the average for Maharashtra (774 units). It was also the least amongst all the regions except Marathwada. The latest figures show that several districts of Vidarbha lag behind in household electrification compared to the State. Data from the Census 2011 shows that several districts of Vidarbha have household electrification rates lower than the state average of 83.9%. These districts include Gadchiroli (59.2%), Yavatmal (69.7%), Washim (76%) and others.

At the end of the Twelfth Five-year plan (year 2012-17), the demand in Vidarbha may touch 6,000 MW (provided the MIHAN project is fully operational). But considering the power

projects in the pipeline, the export of power will continue to be same or even more in future. However, one should be mindful of the trade-off between water requirement of the agricultural and the power sectors, hence allocation of water between these two competing demands will have to be done judiciously.

Another issue that needs to be addressed is balancing the needs for power production and environmental conservation. Vidarbha has significant coal deposits and good water resources in many areas. Thus, coal based thermal power plants appear to be a good developmental option for the area. Indeed, as already noted, there is already significant coal based electricity generation capacity in Vidarbha, totaling to 5,260 MW, representing approximately 29% of total installed generation capacity in the state. There is in general great resentment, skepticism and even opposition to plans for building new thermal power plants and expanding the coal mining in Vidarbha. Part of this is based on the region's experience with the existing thermal power plants and coal mines. On one side, areas where such power plants and mines already exist face severe problems of pollution, displacement, drying up of ground and surface water sources, diversion of water from irrigation and drinking water needs, increase in health problems, fall in agriculture production and productivity and impact on livestock. On the other hand, and ironically, the region continues to face power cuts and lower levels of household electrification and electricity consumption in comparison to several other parts of the state. This includes consumption in household and agriculture sectors.

One of the ways to counter this legitimate grievance and reservation against coal and power sector development is to undertake – on priority basis – restoration of ecological balance in Chandrapur (*refer to the study by Prayas commissioned by our committee*). This again has to be taken up as an additionality and part of non-divisible pool of plan expenditure. Thus, going forward, environmental standards have to be strictly enforced, water conservation and trade-offs should be worked out in a transparent manner and the degraded sub-regions have to be recompensated in a fair and ring fenced way. All these measures, we believe, will enhance credibility about future plans and help mitigate the 'trust deficit' amongst the stake-holders.

5.1.8 Competitive Disadvantage of Current Tariff Policy

The data relating to Industrial Power Tariff of high tension and low tension consumers are presented in Table 5.1.

Table 5.1
Industrial Power Tariff

(Rs. per KWH)

State	High Tension	Low Tension
Maharashtra	7.68	8.50
Karnataka	6.00	5.25
Gujarat	5.30	5.50
Andhra Pradesh	5.50	5.70
Madhya Pradesh	6.00	5.85
Chattishgarh	4.80	5.25
Goa	4.50	3.30

Source: Maharashtra Veej Grahak Sanghatana

As seen from Table 5.1, Maharashtra levies the highest tariff per unit of KWH both in relation to high tension and low tension consumers. Power being the essential and substantial input for manufacturing sector, the industry of Maharashtra is put to a competitive disadvantage with reference to the industrial units located in other states. Clearly, non-vatable electricity duty is a major contributing factor for these high tariffs and this needs rectification. Finally, since the region suffers from comparative disadvantage vis-à-vis neighbouring states, we recommend adoption of lower tariff for the Vidarbha region, which we believe will go a long way towards promoting industrialization including encouraging MSMEs.

5.1.9 Tourism

Tourism is another sector which is potentially on the threshold of take-off in Vidarbha because of domestic and international traffic. Given the locational advantage, wild-life in forests, and heritage places, Vidarbha can easily scale up through appropriate strategic moves.

Tourism promotion in Vidarbha should be considered as a primary booster for employment and income generation through expansion of hospitality and travel industry as well as leisure industry. Towards this, speedy implementation of the TCS Reports already approved by the Government will be useful. Further, the government will have to undertake measures to provide supportive infrastructure such as connectivity, relevant skill development that will in turn crowd in private investment in hospitality and travel industry. Yet another instrumentality that will help boost tourism is through creation of Vidarbha Tourism Development Corporation.

With GST coming, Nagpur and around will once again become the natural choice of Logistics Hub, provided the necessary infrastructure is put in place to meet the needs of present and future supply chain management. Logistics can be encouraged by systematic land use planning for 100 km along the NH 6 and NH 7 and NH 69, from Nagpur in all directions; demarcation by zoning 1000 acres of land on all four sides of Nagpur for Integrated Logistics Parks; providing the status of industry to logistics; and supporting investments in logistics with a package scheme of incentives similar to industries. Establishment of airports at every district head quarter with necessary facilities will encourage and enhance not only the movement of tourists but also business personnel, as a positive linkage effect leading to creation of huge employment in the region.

5.1.10 Big Push- Major Proposals

In addition to the above mentioned sectoral initiatives and policy reforms, we envisage a few large scale projects whose launch itself will optically provide a positive signal and inject greater enthusiasm, as well as credibility amongst the stakeholders and hence attract greater private sector investment flows in the region. This in turn will encourage backward and forward linkages and lead to a greater expansion of economic activity in the region. To illustrate, aerospace and defence manufacturing and hi-tech industries increasingly has very strong linkages with other strategic and large industries such as telecommunications, electronics, optics related and other speciality materials.

Another visible factor is the impact civil industries have on aerospace and defence manufacturing. The key among these trends is the increasing usage of Commercially-off-the-

shelf (COTS) based civil manufacturing components in systems made for use in A and D segment.

The Big Push Proposals will thus consist of development and encouragement for setting up of highways, railway corridors, an international airport, aviation and aero space hub, amongst other things. Specifically, the Surat to Paradeep highway, rapid expansion of MIHAN, and Nagpur International Airport constitute three such projects.

Towards these projects, the Central Government will need to make a major contribution. Of course, the State will have to persevere with and prevail upon the Centre to make necessary budgetary provisions.

With more than 50 engineering colleges in the region, availability of technical manpower should not be the problem. Nagpur and Amravati can be developed as IT hub considering the National Institute of Technology functioning in this region along with number of management institutes and private engineering colleges.

5.1.11 Completion of Pending Development Projects

All the pending developmental projects shall be evaluated by adopting 'Zero Based Budgeting' criteria. The evaluation shall facilitate a detailed re-examination of the dragged on projects with a goal congruent viable outcome. The targets shall be realistically reset for all these projects within the frame work of outcome specific blue print. The evaluation shall also throw up the overall funding needs of the region in a realistic manner.

In order to harness the benefits of the agriculture completely, essential collateral requirements is power connections for agriculture pumps and village road connectivity. Huge delays continue in providing power connections impairing the utilization of even the existing irrigation facilities. Even though village connectivity has been improved by laying roads, proper maintenance and upkeep of the roads is of critical concern. The road maintenance and upkeep works are generally being taken up at an interval of once in six years instead of once in three years because of paucity of funds.

Completion of MIHAN in all respects and hundred per cent allotment of vacant plots of MIDC could be another important measure towards accelerating the growth of the secondary sector of Vidarbha. The financial investments needed for this purpose are residuary in nature and minimal in quantum.

Effective and efficient utilization of existing infrastructure facilities relating to education and health care would go a long way in propping up the tertiary sector. The requirement is that of qualitative deliverables from these two vital wings of the government whereby migrations from public facilities to private facilities could be arrested and good service to the common citizen can be enhanced. The warranted investment is qualitative administration fostered by qualitative governance.

We are confident that with these measures efficiently implemented, Vidarbha region will grow at an accelerated rate of at least 15% per annum on a sustained basis over the next two plan periods.

5.2 Growth Strategies for Marathwada

As in the case of other regions, the growth strategy here is based on identifying the strengths and the constraints faced by the region. The growth strategy thus leverages the strengths through infusing public investment and the constraints are overcome by reforms in governance processes. The major strengths of the region are strategic location, existing dynamic manufacturing and SME clusters, heritage tourism, solar energy, regional language ITES and BPO capabilities. The constraints on the other hand are natural resource scarcity such as water, skills deficit, connectivity (rail/ road) deficit, governance deficit, especially, administrative capacity to efficiently utilize development expenditures and hysteresis effect related to social capital. The strategy thus seeks to accelerate regional growth rate in an inclusive fashion by successively removing the constraints mainly through governance and policy reforms and leveraging the comparative dynamic advantage so as to significantly reduce the per-capita income-gap between Marathwada and other parts of Maharashtra. The following sections provide the details of the growth strategy and specific measures.

5.2.1 Socio-Political Initiatives

These refer to such initiatives that create awareness, engagement, confidence, greater gender sensitivity and change in the development perspectives of the region so as to make it conducive for accelerated growth. Given the culturally induced constraints due to historical legacy, such socio-political initiatives are essential to initiate accelerated and inclusive growth in Marathwada. Such initiatives must also extend to and lead to a vigilant political leadership in the region.

5.2.2 Administrative Restructuring

There are six administrative divisions in Maharashtra. In most of the divisions, there is one Divisional Commissioner for five districts, each. But in Marathwada there is one Divisional Commissioner for eight districts. There has thus been a persistent demand for more than one Divisional Commissioner in the region. The State will have to take a proactive decision in this regard.

5.2.3 Promotion of Education and Skill Development

In our chapter on Education we have dealt with various aspects of education, training skill development. However, given the specific nature of tailor made educational initiatives necessary for Marathwada, we have reiterated some discussion here at the cost of overlapping and repetition.

1. The literacy rate of all districts of Marathwada is below average literacy of the State. Concentrated effort to leverage SSA (Sarva Shiksha Abhiyan) will ameliorate the situation in the region.
2. As in some other regions, the students of Std. IV to Std. X in the region should be motivated for appearing for specially designed competitive examinations (such as MTSE) by providing special coaching. For this, requisite funding should be provided by the Government.

3. Using Information Technology methods (development of content in regional language, functional English and concepts of basic sciences particularly for the students of Std. V to VII) should be strengthened for all the schools, especially, for rural students.
4. Students from Std.VIII to X should be made aware and enabled to opt for appropriate vocational courses using the National Vocational Certification Framework. The chapter on Education in our report has detailed recommendations related to this feature.
5. Students of undergraduate level particularly, B.A., B.Com., B.Sc., should be made aware and encouraged to opt for appropriate value added vocational courses in retail, hospitality, finance, banking, insurance, tourism services and hospital management, which are related to specific thrust areas for the region to improve their livelihood prospects.
6. If an industry or group of industries / business houses is ready to commit employment to minimum 60 students every year for the next five years, they should be given complete autonomy to run vocational training polytechnics.
7. To elevate educational standard, an NIT / IIT / IIM to be established in the region. This will bring-in talent force from whole country to the region and which will work as a change agent for ambition and culture of local students.
8. Women education in Marathwada needs special attention and hence additional financial provisions for hostels and other relevant infrastructure provisions for women. Special funds should be given for safety and security of the women at their stay and arrangement should be made for transportation.

5.2.4 Regional Growth Centers:

The growth centers will have following focal sectors/areas:

- Manufacturing Industry (including MSMEs)
- Agro-processing
- Tourism
- Higher and Technical Education
- Solar Energy
- IT/ITES

5.2.5 Identification of Growth Centres

Transforming the region will require development of growth centres which entail provision of supportive infrastructure such as land, water, power, logistics & warehousing, and connectivity which, in turn, will require greater resource flows and speedy decision making by governmental authorities. Provision also needs to be made for Common Effluent Treatment Plants.

5.2.6 Categorization of Growth Centres

Growth centres can be in multiple categories depending on the initial conditions and the growth possibilities.

1. **‘Move up the ladder’ growth centers:** Locations where economic engine (industry, trade, tourism, education) is established and requires further support for accelerated growth. Aurangabad, Jalna are the prime examples of such centres.
2. **‘Prospective’ growth centers:** Locations where conditions are conducive for promoting manufacturing, agro processing, tourism, solar energy etc. due to natural advantage. Nanded, Latur, Osmanabad are the prime examples of such centres
3. **‘New’ growth centres:** Locations where larger infrastructure investment will be required to generate the potential advantages particularly in agro processing sector and manufactures. Hingoli, Parbhani and Beed are prime examples of such centres.

5.2.7 Industrial City Infrastructure Development

Challenges

Due to both industry as well as tourism, a city comes under immense growth and transit pressure. Unfortunately, infrastructure is not getting developed at the rate at which city is growing. This is now impacting on routine transactions and has largely impacted image of the city. This is becoming a major hindrance for growth.

Recommendation

An independent Aurangabad Regional Development Authority should be established for building, road, flyovers, water supply, drainage, transport depot, sports complex, trade centres, tourist attractions and green cover of the city to meet long term growth needs of the city.

5.2.8 Development of IT and ITES

The IT industry segment is one of the quickest industries to establish and provide employment to many people in different skill sets. This sector will help to bring regional balance.

As per the business magazine survey in Pune IT area, it is revealed that, out of the local employment in IT sector of Pune, Marathwada and Vidarbha contribute to 12%. This clearly indicates that both the regions have IT and ITES qualified manpower which migrates to Pune. This indicates potential of these regions.

Recommendations

1. There are many initiatives being undertaken at the levels of Central and State Government for E-Governance, which call for software development, software maintenance, data collection and organizing back office work.
2. Government should ask software development companies to manage and execute the projects from Marathwada regions. For such execution, Industrial Association of Marathwada will welcome multi-national and big IT companies to the region, and will provide complete local support.
3. It is also proposed that priority should be given to local IT units to participate in such

activity, either directly or through big companies. This will foster the employment and entrepreneurship in the region.

4. Further, AT Kearny – NASSCOM survey has rated Aurangabad to be eligible in 25 IT and ITES conducive destinations. Hence, as a pilot case and to foster the development of IT, ITES in the city, Chikalthana industrial estate should be considered for non-polluting IT and service sector as it is now surrounded by residential areas and special efforts should be made to bring few IT majors in the region.

5.2.9 Establishment of Tiny Industries

It is very important to promote micro industries in rural area and in small towns to give opportunities to local entrepreneurship and to develop economic engine for the town / rural region.

Need of less place, lesser level of investment and self employment of owner along with employment of 5 to 20 people is the basic 'business model' in tiny industry concept.

KVI and industrial activities involving low skill level but high level of human efforts should be considered for tiny industry.

Providing good market, good infrastructure, initial investment support and working capital at low interest rate will be the key to make these small industries successful.

To facilitate these objectives, incentives should be provided to 'the buyers along with the tiny industry'. Also the participation of bankers should be increased in such a business model for making the business viable and for having better financial control of such industries.

The proposed tiny industry model is as follows;

1. A town of 10,000 population having good road or rail access from prominent industrial estate and which is within the range of up to 150 km is most conducive to establish tiny industry model.
2. In the Tiny industrial estate, industrial construction of 50,000 sq. ft to be carried out and should be allotted to approximately 50 entrepreneurs. The total investment of these 50 units will be about Rs.25 Crore. This will generate employment for 500 people and will churn a business of approximately Rs.100 Crore per year.
3. The employment to 500 people in a town of 10,000 population will take care of 25% residents and this is just possible by allotting area of approximately 2 to 3 acres and with the business support of Rs. 25 crore.
4. Today, land acquisition is a major challenge. Due to small area requirement, this concept will help to reduce the land acquisition challenges and take industry at town level.
5. The key aspect to make this model successful is providing incentives to both, buyers as well as to sellers for a period of 5 years.

5.2.10 Development Initiatives for Agro-Processing Industry

Considerable potential exists in Marathwada for agro-processing units. Creating of trading platforms/hubs will be a pre-requisite to facilitate further expansion and consolidation of such units. This will be a mandate for the proposed Maharashtra Agro-Industrial Corporation (MAIC) (*see* our report in the Agriculture Chapter). These hubs are expected to cover important products of Marathwada such as cotton, soya, sweet-lime, dal etc.

The corporation (MAIC) will also need to take care of infrastructure requirement for cold storage and packaging, air-cargo facilities and establish product supply chains.

- Marathwada is one of the largest producers of cotton and has a good presence of ginning mills. The business should be taken at the next level of value addition by way of establishing 'Textile Parks'. Forty packaging machine manufacturers have established 'Packaging Valley' at **district of Schwaebisch Hall** in South Germany. On the same lines, 'Textile Park Valley' should be established in Marathwada. Attempts should be made to attract multinational companies to establish their textile park in the region.

5.2.11 Development of Tourism

Marathwada has a natural/historical advantage as a destination for cultural/pilgrimage tourism. Given the employment potential of this industry, it should receive a high priority. Towards this, there is a need of systematic, focus plan and execution of infrastructure and support facility development to facilitate convenience, comfort and attraction of tourist and visitors in this region. The Government of Maharashtra has already declared Aurangabad as the Tourism Capital of Maharashtra. To achieve this in reality, following special efforts would be useful.

1. Four lane road connectivity to all tourist destinations
2. Super fast train connectivity with higher frequency to Mumbai and Hyderabad.
3. Aurangabad has an international airport. Regulatory provisions should be initiated for commencement of international flights with requisite facilities and arrangements for international flights at Aurangabad airport.
4. Direct train connectivity to Bengaluru.
5. Air connectivity to Hyderabad, Bengaluru, Ahmadabad, and Jaipur.
6. Allotment of special funds for repair, maintenance and beautification of tourist destinations.
7. Organizing industrial cum tourist exhibition at Aurangabad.
8. Creating laser, sound, film show facilities at locations like Bibika Maqbara, Deogiri fort, Ellora and Ajanta Caves.
9. Creating special task force with police for directions, support, safety and confidence building of tourists from safety point of view and this will prevent exploitation or harassment from various service providers involved in tourist business.
10. Creation of separate Tourism Development Corporation of Marathwada.

5.2.12 Solar Energy Development

The recent technological breakthrough for more efficient harnessing of solar energy and the growing need for environment friendly energy policy offers a strategic opportunity for Marathwada to leverage its natural comparative advantage. Given the fact that it requires very less quantum of water compared to power generation based on fossil fuels, for a water deficient region of Marathwada, the solar energy option becomes a potential game changer. The supply cost of this option is now economically viable as evidenced by experience of other States in India.

The areas of Marathwada particularly amenable for such initiative would be Osmanabad, Parbhani, and Beed. According to preliminary estimates, the potential is vast and can exceed 10,000 MW in one district alone. To achieve this, proactive changes in terms of enactment of new solar energy policy by Government of Maharashtra will be required. This could be along the lines of the policies pursued by Rajasthan and Tamil Nadu amongst others. On the lines of MIDC, the Government can set up solar parks which provide infrastructural inputs, common facilities such as telecom, transmission facilities etc. Here private sector will play an important role and the Government agencies will have to be proactive to encourage private sector.

These new initiatives along with Big Push projects such as Ratnagiri- Osmanabad multilane highway, Nagpur-Ambejogai Railway project and major airports at district places will accelerate long term growth rate of Marathwada to the level of 16% and above.

The last three sections along with large road connectivity project will comprise the Big Push for this region. With the aforesaid measures, it will be possible to accelerate the long term growth rate of Marathwada to the level of around 16% which will allow the reduction in the disparity in regional incomes on a sustainable basis.

5.3 Growth Strategies for Rest of Maharashtra

The Rest of Maharashtra as a region has 57 per cent of population and 47 per cent of the area. It has a great deal of diversity within itself. It has three coastal districts, six hilly region districts, four predominantly tribal districts and very large number of permanently drought prone talukas. At the same time, it accounts for a large manufacturing base of the Maharashtra's economy. It is necessary to assess the strengths and weaknesses of each of these zones within RoM distinctly.

5.3.1 Strengths of Rest of Maharashtra

This region has a number of strengths. Rest of Maharashtra (RoM) is a large diversified pool of natural and human resources. It has three coastal districts, six hilly region districts, four predominantly tribal districts and very large number of permanently draught prone talukas. Given the agro-climatic diversity, there is greater crop-pattern diversity in this region. Many of the districts and talukas are reputed for their 'crop specialization' for example, Nashik and Sangli for grapes, Lasalgaon for onion, Sangola for pomegranates, Ambegaon for chips-potato and so on.

5.3.1.1 Rapidly Growing Industrial Centers

It has five major industrial growth centers, namely, Thane, Pune, Ranjangaon, Sinner and Nashik. The above mentioned industrial growth centres have significant number of educational institutions. They provide a diverse range of technical and liberal education. Some of these centres have emerged as educational hub for the entire country. Due to such institutional infrastructure, skilled manpower requirement of the industry is more flexibly met with. Most of these centres are within 200 km radius of Mumbai. Industries usually prefer proximity to materials, proximity to markets for products, and availability of suitable skilled labour. Industrial centers in RoM have most of these ingredients. Hence the rapidity of industrial growth in these centers is not surprising.

RoM as a region has a long tradition of social and political reform movements. Many national leaders were active in rebuilding and modernizing traditional social structure. Many movements established their schools, colleges, libraries, and cultural societies. Social influence of these movements, their thinkers and active social leaders is evident in the ways of urban social and cultural life in the RoM. The cities of these regions are relatively more cosmopolitan, and influence of liberal atmosphere and flourish of educational institution have contributed to the in-migration in some of the cities significantly. Urbanization in this region has accelerated during last two decades. It has been able to draw and attract talent from all over the country. Hence, many skill oriented industries, particularly services sector enterprises, prefer to develop their centers in this region.

5.3.1.2 Sugarcane Processing Co-Operatives

Since 1952 the movement of co-operative sugar factories has been one of the most powerful economic and social forces. It has shaped and developed political leadership of these regions with exposure to modern technologies, management and world markets. This is one of the largest agro-processing industry operated under co-operative structure. Districts of Pune, Satara, Sangli, Kolhapur, Solapur, Ahmednagar, parts of Nashik, Dhule and Jalgaon are well known as Sugarcane belt of Deccan plateau. Development of sugar industry through states supported co-operative sugar mills has been dominant and distinguishing feature of these districts. Paradoxically enough, except Kolhapur, most of these sugar producing districts are part of rain-shadow regions of the Sahyadri ranges. A large number of irrigation projects and potential created by the State Government is concentrated in these districts. The political leadership of these districts commands apparent clout in making and unmaking of many crucial economic policies.

5.3.1.3 Milk Processing

Since 1970s Maharashtra embarked upon the programme of diversifying the breed of milk animals. BAIF, a Non-Government Organization, provided the impetus for artificial insemination centres and the number of cross breed cows in the region has

increased tremendously. Since then milk production in RoM has increased significantly. In the initial phases government dairies were important in signaling spreading and providing the necessary support. Presently there is a competitive mix of private companies and co-operative establishments that produce a large range of milk products ranging from packaged pasteurized milk to variety of cheeses, sweets and ice-creams. Most modern facilities of milk processing are now available in this region.

5.3.1.4 Horticulture

Horticulturist farmers of RoM have proven their commercial orientation and technological absorption capacities. Producers organization such as Draksha Bagayatdar Sangh, Dalimbh Utpadak Sangh have played commendable role in exploring appropriate technologies, agricultural practices and have been instrumental in broadcasting them among the member-producers. The nature and quality of part of extension service by this organization has been lot more effective and sustainable than any other agencies. Their promotional role extending to voicing and articulating the problems of growers has also been important. They have successfully created, harnessed and consolidated export potential of these horticultural crops. Maharashtra is now a major and principal exporter of grapes and pomegranates. These farmers and farmers' organizations have inspired many farmers from other regions, notably in Marathwada (Latur, Osmanabad). There is a need to extend this institutional innovation and develop the capacity for absorption of technology.

5.3.2 Weaknesses

At the same time these advanced industrial regions are surrounded by pools of extremely backward villages with low income. The contrast is even more striking in the district such as Thane. In this single district, we witness co-existence of advanced industrial townships surrounded by poor fishermen economy along the coast and extremely deprived backward tribal communities. Similar phenomenon has also been gradually evolving in the adjacent Raigad district.

5.3.2.1 Problems of Rapid Urbanization

As a result of expanding industrial growth, this region is more rapidly urbanized. Rapid urbanization has its own resource implications. In particular, drinking water and industrial water use in this region is expected to rise exponentially. Except few centers such as Pune and Pimpri Chinchwad, the planning for urban drinking water requirement is very weak. Many towns do not have recycling of sewage and waste water. Environmental pollution in case of water is growing with an alarming rate. Rapid urbanization results in a boom of housing construction. In the absence of long term land use policy, lack of visionary planning of townships and rigidities of land market related regulations have created many types of socio-economic problems in the urban areas of this region. Rise of land mafia, illegal constructions, fly-by-night operators, and illegal occupancies are burgeoning this region.

5.3.2.2 Problems Associated with Sugarcane Processing Industries

Predominance of sugarcane crop has resulted in extreme inter crop imbalance in the consumption of water resources. Also seen is the relative price and income stability associated with the sugarcane processing as a result of perpetuation of sugarcane as a preferred crop for the farmers. Yet on the other hand, very large number of talukas remain completely dependent on the vagaries of monsoon. They are under a permanent threat of drought or drought - like conditions. On the other hand, a significant number of sugar mills in co-operative sector is not economically viable. Many of these sugar mills are mismanaged; yet they remain protected due to political patronage. Licenses were issued under political pressure and exaggerated potential indicated in the project proposal. In the last few decades quite a few sugar mills were either auctioned or their management has been transferred to private operators for finite period under competitive bidding. In this process, the essential spirit of co-operative processing by the farmers to gain from further value added chain has been lost. On the contrary, there is a tussle between farmers and management for asserting their economic interest.

5.3.2.3 Problems of DPAP Talukas

As a result of these growth processes (industrialization, urbanization and unbridled growth of sugarcane crop) water resource economy and its management has become the most burning question in RoM. Co-existence of water deprived DPAP regions and high water consuming crop pattern breed worst kind of regional imbalance within RoM. This calls for an incentive based policy intervention that will redress this macro issue arising out of apparent micro-level rationality.

There is an increased awareness about this problem in farmers and policy makers. Water resources in these regions are scarce. This region has a long painful history of famines and recurrent drought-like situation. Hence sustainable growth strategy warrants combined use of water saving technologies and policy measures to incentivize them. Various micro irrigation techniques such as drip irrigation, sprinkler irrigation are becoming increasingly popular. Agriculturist in RoM has become increasingly more aware and willing for adopting these irrigation techniques. A number of manufacturers and suppliers of such irrigation systems have increased and prices of the equipment, installation and maintenance have been competitively lowered. So far the department of agriculture has been operating the scheme of subsidy for drip irrigation. With changing economic awareness and cost of operations, the number of farmers embracing these technologies will be rising. This phenomenon is more easily noticed and experienced in the regions where farmers have diversified in favour of horticultural crops like grapes, sweet limes, and pomegranates. There has to be a concerted move to reduce subsidy and provision of reliable and easy credit to the projects that are sustainable/bankable.

5.3.2.4 Konkan and Hilly Regions

The topography of the hilly regions and peculiar agro-climatic conditions prevalent in

these regions deserve to be addressed on a distinguished basis. In design and planning of the infrastructural projects such as roads, irrigation and water storage, hospitals and schools the norms which are suitable in other regions are unlikely to be useful and suitable for these regions. Therefore planning of the public good provisions such as roads, port connectivity, irrigation and drinking water storage should be undertaken with suitable and appropriate modified norms. Most of the tribal population happens to be resident in these areas. Difficult physical access further worsens the prospects of their inclusive growth. Therefore separate recommendations have been made for these regions.

5.3.3 Remedies and Policy Alternatives for Sustaining and Accelerating Growth

Micro Irrigation: In order to economize use of water in sugarcane cultivation, the State Government must involve sugar co-operative factories and use them as the major conduit for spread of micro irrigation techniques. The co-operative factories are primary users of sugarcane and have contractual liability of processing sugarcane grown by members. The significant portion of capital needed for establishment of factories has been contributed by the State Government and state has provided guarantee to the debt capital. Moreover, in view of persistent relative scarcity of water, government should regulate the use of water through appropriate economic instruments. As a policy, sugar factories may be incentivized as well as persuaded to support adoption of micro irrigation techniques for its members.

Over next five years, the entire area under sugarcane affiliated to co-operative factories would be required to adopt micro irrigation systems in cultivation of sugarcane. Given the quantum of area, number of farmers, the cost of installation and operations may be easily organized on selective group basis among farmers. Hence, the present individual farmer based subsidy scheme could be phased out. Simultaneously, farmer-groups may be given cash support for water harnessing, harvesting and conservation. State should also put limit on area under sugarcane in a given river basin as suggested by Godbole Committee and Water Commission (1999). Such policy measures would restore rational balance of water use between crops. It would also result in significant saving in the water presently wasted and it could be re-allocated in favour of water starved regions of the same talukas. In our chapter on Water Resources we have advocated protective irrigation as a mandatory norm in regional equalization. Such a change in policy will result in additional quantum of water resources necessary for protective irrigation.

5.3.3.1 Supportive System for Group Farming

Over the years, the average size of operational land holding in agriculture has been diminishing. Reduced size in operational holding narrows down the prospect of crop diversification and generates diseconomies of small size. Many farmers have begun to realize this binding constraint and have sought remedy in pooling their resources together to reach optimal viable size of operations. We have noticed that group farming as well as group marketing is becoming increasingly popular among various villages and crops. Such a voluntary effort and organizational innovation needs to be duly supported by the Department of Agriculture and the State Government. In particular, the nature and quantum of credit for their commercial activities deserves interest rate subvention.

5.3.3.2 Necessary Modifications in APMC Act

Change in the APMC Act is one major area of policy reforms which hold great promise in Maharashtra in general and RoM in particular. With the emergence of group farming direct marketing by the farmers becomes feasible and attractive. Similarly, the farmer groups would be able to reach critical standard quantum necessary for participating forward/future markets. The State Government can use a part of its warehousing capacities to enable farmers in organizing marketing of their produce. Similarly, the scheme of warehouse receipt based credit to farmers can be more meaningfully implemented.

5.3.3.3 Agro-Processing Units

A number of horticultural crops produced and marketed in RoM provide enough bases for development of agro processing industries. Generally, processing industries require different choice of varieties that are more suitable for food processing. Introduction and stabilization of the varieties of each crop suitable for processing would be an important source of growth. In the initial phases certain technologies need to be imported and absorbed. In particular, aseptic packing, handling, preservation and storage capacities need to be created on an affordable scale. Such initiatives are mostly important for regions of Konkan and horticultural growers in DPAP regions. For both of these regions horticultural diversification holds greater and better promise. In both these regions (DPAP and Konkan) new varieties suitable for processing should be explored and introduced on a priority basis. Khandesh, most notably Jalgaon, has registered impressive progress in pulses and processing of pulses. Similarly the poultry industry has registered sizable growth in the regions of Dhule, Navapur.

5.3.3.4 Small Ruminants

In DPAP regions, promotion of grass and fodder crops will be a good pathway for diversification together with horticultural diversification. These regions have been traditionally habited by the pastoral communities engaged in raising small ruminants livestock. Goats and sheep are two species that hold great promise for these regions. It is necessary to introduce new species and develop necessary veterinary services for this trade.

5.3.3.5 Industrial Growth

Industrial growth has been a major driver of growth in RoM economy. This region has to effectively compete with several other states of India to meet its pace of development. The policy should address some emerging needs of the industrial development urgently. The focus of policy reforms should be to reduce the cost of doing business. Reforms in the working of MIDC and labour aimed at higher flexibility should be given priority. Two reforms concern availability and cost of power. Industry presently faces higher charges for power. This differential cross subsidy based method of pricing power should be ended. Moreover, duty on power should be allowed as eligible for set-off in computing VAT.

In future industrial growth Small and Medium Enterprises (SMEs) will be an important segment. Growth of this segment will complement more balanced spread of industrial potential. RoM has ample entrepreneurial talent and human capital needed for industrial growth. In order to nurture and support this entrepreneurial potential the State Government should establish Credit Guarantee Corporation for the SMEs.

In view of future industrial growth the connectivity across different regions should be improved with certain projects on urgent basis. These will work as a big push for the industrial and service sector growth. Development of Mumbai Bengaluru corridor, Mumbai Delhi corridor and east west connectivity of coastal port centres to eastern Maharashtra are major projects that would afford significant impetus to industrial and service sector growth in RoM. Development of major and minor ports, and increased cargo as well as passenger route handling along the coast would boost Konkan tourism and commercial potential. Anticipating the future growth trends State policy should aim and plan for air-connectivity and an airport in every district.

As argued earlier different parts of RoM have differing competitive advantage. Konkan has natural scenic beauty but difficult and environmentally delicate at times which are called fragile zone. The State Government should encourage and support less polluting service industries such as education and training in this region. Increased east west connectivity with Konkan as a source of generating human skills will stimulate further boost to new upcoming industrial urban towns such as Sangli, Ichalkaranji and Satara. In the coming decades, knowledge economy is going to be a dominant source of growth. The Government should facilitate growth of knowledge in various ways. Institutions imparting higher education and vocational education and professional education need to grow rapidly. The present available network of private as well as state universities should be significantly expanded. In anticipation of the draft bill for establishment of private universities, the State Government should focus on developing Konkan as an educational industry zone.

Maharashtra is already a highly urbanized state. The proportion of population living in urban areas has been rising fast enough and the urban civic facilities and services will have to increase and improve significantly. Hence several policy reforms aimed at improving financial viability and urban local body governance need to be introduced. In particular regime of property taxes, which constitute the backbone of urban local governments, should be reformed and streamlined. It is necessary to attend the burgeoning problem of land markets and its impact on housing sector in coming decades.

The State Government should improve its environment protection laws and their effective implementation. Policies that induce and enforce internalization of environmental costs should be in place.

The Rest of Maharashtra has already witnessed a rise of group farming and group marketing activities of farmers. A healthy trend needs to be encouraged. In order to facilitate better optimum size of operational land holding, the present tenancy laws deserve to be amended. A suitable modification which would facilitate more

transparent leasing in and leasing out of land without loss of the title should be put in place.

5.3.4 Special Treatment for Konkan and Hilly Regions

The Konkan area in RoM is characterized by coastal cum hilly topography. The geological properties of this terrain are distinct from those of eastern regions of the Sahyadri ranges. Most of Konkan is made up of laterite rocks and soil. The Konkan region receives very heavy rainfall. However, due to a peculiar geological pattern, rain water cannot be easily stored. Most of the water received from rains gets naturally drained along the slope of the Sahyadris towards the Arabian Sea. We, therefore, experience a paradoxical situation of plenty of rainfall but acute water scarcity (It may be pointed out that some of the hilly regions in Nashik district also share a similar problem of heavy rainfall and acute shortage of storable water.). Due to the hilly terrain and the character of the naturally occurring flora, the ecological and environmental characteristics of Konkan are significantly different. Its coastal zones have a number of beautiful beaches and most of the region is lush green throughout the year. However, due to hilly terrains the villages and the townships are located more sparsely. The average size of localities is small and the distances between settlements (*padas* or *wadis*) are on an average much greater and road connectivity is often poorer. Due to heavy rainfall, maintenance of road is more frequent and expensive. As a result of these conditions, access to provision of publicly provided services such as school education, primary and secondary health care remain problematic and insufficient. The average norms established for other non-hilly regions prove to be inappropriate. Hence for this region (and other similar regions elsewhere) differential norms would be desirable and necessary. It is to be noted that both the DPAP regions as well as that of Konkan represent water distress of different variety but are equally crucial in terms of need for redress.

5.3.4.1 Check Dams

Similarly the choice of sites, design, sizes of irrigation or hydro power projects for this region have to be markedly different. There are several sites where a series of small check-dams with combined storage for irrigation water and small size hydro power generation projects would be feasible. There are also many locations which frequently suffer from seasonal floods. The use of graded series of small dams will also be useful in remedying this periodic calamity as well as creating suitable water storages for winter and summer horticultural crops and drinking water requirements. The Department of Water Resources should change its approach to planning, norms of project assessment which would be more appropriate for this region.

5.3.4.2 Strengthening Port Infrastructure

Along the coastal length of Konkan, there are several small and medium ports. In many cases, ports are being upgraded in size and several new ports are expected to come up. Some of these ports are linked with new prospective power generation projects. Successful operation of these ports would need strengthening of east-west road connectivity. At present east-west road connectivity in Konkan is awfully poor and insufficient. PWD should consider development of east-west road connections with four-lane roads as the most important priority for Konkan. For fisheries and

horticulture products, such connectivity would herald better and lucrative commercial access to the eastern parts of Maharashtra and Karnataka. Similarly, the Mumbai-Goa Highway should be upgraded to a six-lane highway as early as possible.

5.3.4.3 Comparative Advantage of Konkan

Konkan has a sustainable comparative advantage in the sectors of fisheries, horticulture and tourism. It has a long deep coast and a series of beautiful beaches along it. Presently, most of the fisheries products are oriented towards the Mumbai market. The storage and preservation capacities needed for fishery products are too meagre and result in massive post-harvest losses. Many horticultural products also face similar deficiency in post-harvest technology and facilities. The State Government should encourage group production, group marketing activities in these sectors and assist the producers' organizations in creating and operating post-harvest processing centers. Producers' organizations can develop suitable clusters to establish and operate such post-harvest facilities. Similar approach may be attempted in a number of forest products harvested from Konkan. Konkan has a large number of forest areas under private ownership. These private owners should be appropriately incentivized to evolve rotation of plantation, conservation and harvesting of forest products including timber. The present undifferentiated blanket ban on harvesting and cutting trees has proved to be counter-productive and unsuccessful.

5.3.4.4 Coastal Regulation Zone

The infrastructure initiative mentioned above would be equally helpful in strengthening tourism capacities of Konkan. The Konkan region has already emerged as the fastest growing tourist destination. However, the extent and the quality of infrastructure necessary for tourism does not exist. Good road connectivity, railway connectivity, coastal route connectivity will be indispensable for augmenting and strengthening tourism potential of Konkan. Similarly, development of tourism also requires a range of lodging, restaurants and hotels. Location of such facilities near the coast would be the strongest attractive feature of Konkan tourism. However, due to a ban imposed by a court order (popularly known as CRZ restriction), many of the attractive tourist locations remain deprived of the opportunity to construct warranted quantum of hotel facilities. The State Government should make necessary amendments to policies which would facilitate more rapid build-up of hotel services capacities in these locations. This has to be done by suitable and rational adaptation of policies in specific areas without hurting the essential logic of eco-sensitivity concerns.

Development of tourism also requires suitable manpower to provide range of services needed by the tourists. The Government should encourage and assist educational institutions to introduce several skill based programmes relevant for development of tourism. The MTDC/Government of Maharashtra should undertake a campaign for building up tourism brand for Konkan. It should also invite the private sector to build up adequate hotel capacity and operate joy ride coastal transport along the western coast.

A large area of the Sahyadris (Western Ghats) is located in the Rest of Maharashtra region. This area is environmentally sensitive and fragile. It is important to protect the environment and the ecological balance of this area without affecting the process of economic development. Recently the Kasturirangan Committee has reviewed the problem of protecting Western Ghats. This committee endorses the recommendations of the Kasturirangan Committee Report.

5.3.4.5 Coastal Highway

A coastal highway, that is, State Highway No.4 runs along the coastal region of the State parallel to NH-17. It starts at Zai in Thane district and after traversing through Raigad, Ratnagiri districts, it ends at Redi in Sindhudurg district. The state ports along the coastal highway are Dighi, Dabhol, Jaigad, Ratnagiri, Jaitapur, Vijaydurg, Devgad and Redi. The total length of this coastal highway is 787 km.

The highway comprises 51 major and minor bridges, out of which many are completed, and some are in progress (see chapter 13 on connectivity for details). This coastal road needs to be completed soon.

If the above suggestions made are implemented, we are confident that the entire region will be able to continue to grow at around 14% per annum on a sustained basis despite its large base and will be able to sort out the intra-regional issues.

5.3.5 Growth Strategy of Khandesh

Dhule and Nandurbar have experienced significant changes in crop patterns. Nandurbar has registered impressive growth in the area under cotton and per hectare yield of cotton. These districts are on the border of Gujarat and Madhya Pradesh and presently traders procure cotton from these areas for textile industry across borders like Parbhani and Hingoli. Nandurbar will potentially develop as a major producer of textile products. Development of textile parks and improving the connectivity of Dhule and Nandurbar by roads as well as by rail will consolidate and stabilize the potential of industrialization and trade in these very backward districts.

Jalgaon, Dhule and Nandurbar have large tracts of dry land farming areas. Promotion of water conserving and productivity enhancing micro irrigation techniques should be the priority for these districts. The Shirpur Pattern of Dhule district has already become a reputed model of irrigation development and it needs to be more extensively practiced. Water conservation strategies including recharging of ground water should be extensively promoted in these districts. Dhule and Nandurbar have a sizeable tribal population and we have dealt with this special virtual region in a separate chapter. Like other talukas of Nashik Division most of the talukas in these districts have difficult terrain and planning of road and water resource development projects should be based on distinct appropriate norms. Jalgaon is a well-established producer district of bananas and pulses. Improvement in its rail and road connectivity will further augment its export and domestic trade potential. There has been a long standing demand for Manmad-Indore railway connectivity which would significantly benefit Malegaon, Jalgaon and Nandurbar regions.

5.4 Growth Perspective for Vidarbha and Marathwada

As we explained in our Chapter 4, acceleration of economic growth of lagging regions will make most important contribution towards correcting the regional imbalance. Our analysis in Chapter 3 has already portrayed the nature of growth process in different regions. At present the compound annual growth rates of the regional domestic product in current prices are: 13.72 per cent (RoM), 14.60 per cent (Marathwada) and 13.23 per cent (Vidarbha). For achieving balanced regional development we propose that disparity measured in terms of differences in per capita income amongst the regions should be reduced by one third in next 12 to 15 years. To achieve this objective, the growth rates of Vidarbha and Marathwada need to be significantly increased. This means, with the RoM maintaining its rate of growth around 14 per cent, Marathwada would need to raise its rate of growth to 16.5 per cent i.e. increase in the rate of growth by nearly 175 or 200 basis points above the present growth rate of 14.6 per cent (in current prices). Similarly, rate of growth of Vidarbha will need to be stepped up to 14.5 per cent i.e. 125 basis points higher than present growth rate. These rates were indeed achieved for a period of few years in the past, indicating targeted growth rates on a sustained basis are achievable provided policies and governance reforms recommended in different chapters of our report.

5.5 Concluding Remarks

There are a number of sun rise industries where opportunities exist in all regions of Maharashtra and these are covered in the Chapter on Industries. In this chapter, what we have done above is: identified constraints in a diagnostic mode and suggested the strategies for their mitigation and removal. Further, we have identified region specific strengths and arenas to be leveraged for growth acceleration. We have identified sectors as well as Big Push projects. We have also suggested policy measures and reforms apart from suitable institutional modifications. All of these constitute an interrelated package, efficient implementation of which along with strong decentralization in letter and spirit, will allow the lagging regions to accelerate their growth rate, and RoM to stabilize its growth even at its current large base while sorting out the emerging intra-regional issues.

Committee is of the view that achieving balanced regional development primarily means progressive reduction in economic disparities as reflected in gap in per capita incomes of the regions. Such reduction in disparity is possible in two essential ways: Equalization of access 'in public goods' and accelerating the economic growth in the regions in tune with their respective dynamic comparative advantage. As it is already observed in the Chapter 3 (Regional Development : Trends and Patterns in the Recent Past) that all regions have experienced growth in the last decade and will continue to grow in the future. In order to achieve balanced regional development, the lagging regions should grow more rapidly. It may be pointed out that more rapid growth in the lagging regions does not warrant holding back or slowing down the growth process in the relatively advanced region. On the contrary the improved infrastructural connectivity across regions and further closer integration of their markets would elicit complementary positive feedback growth effects across regions.



CHAPTER 6

Governance : Towards Greater Regional Empowerment and Accountability

“Good governance is perhaps the single most important factor in eradicating poverty and promoting development” Kofi Annan.¹

6.0 Introduction

Governance is a pivotal factor in ensuring the development of any area. In the short run, certain measures can be taken to correct the developmental imbalances occurred already, but in the long run it is necessary to ensure proper governance both at policy as well as implementation levels so that the imbalance does not arise in the first place itself.

As could be sensed from the committee's visits to all three regions in Maharashtra, the separatist tone was more pronounced in Vidarbha region. However, in Marathwada and Konkan too, people echoed similar feelings. Even the Western Maharashtra voiced its intent to walk alone if it does not get its dues. In both Vidarbha and Marathwada, the concern expressed was also to ensure development of the region through having the same political and administrative say in decision making process, as what probably the Western Maharashtra has today. It shows that each region wants to have effective voice in the governance in the process of development. The task before the committee, therefore, is to suggest such governance mechanism, which will not only assuage their feeling of deprivation, but will also ensure decision making process, which would foster better regional growth. It is necessary to evolve a governance mechanism that enables region specific decision making and accountability so as to effectively address the regional needs and priorities. The efforts for removal of backlog and equitable distribution of resources to three regions have, over the years, led to a fairly comprehensive policy of the State, particularly through the mechanism of Article 371(2). However, there is still a need to create an effective mechanism for enforcement of the principles of balanced regional development adopted by the State.

6.1 Major Milestones in Regional Governance

6.1.1 Nagpur Agreement (1953) (See Annex 1.1)

The origin of the movement for MahaVidarbha can be traced back to 1905. The Akola Pact of 1947 entered into by the Congress Party leaders agreed to establish a single province of United Maharashtra with sub-provinces for the Marathi speaking areas, Central Provinces and Berar, by the name ‘MahaVidarbha’ and the Western Maharashtra with separate legislatures and cabinets for the sub-provinces, but with a common Governor. Subsequently in 1953, the Nagpur Agreement was signed. (See Annex 1.1) The Nagpur Agreement (1953), enunciated the principles of governance of State taking into consideration the varied development levels of three regions and the comparative backwardness of Vidarbha and Marathwada. The whole

¹ United Nations University, <http://unu.edu/publications/articles/what-does-good-governance-mean.html>, Kofi Annan, former Secretary General, United Nations

debate of regional imbalance since the Nagpur Agreement has led to a formal recognition of the three regions as units of governance. It is imperative that the Nagpur Agreement is considered as the guiding principle by this committee, for making recommendations in the area of governance. In fact issue of governance seems to be the most important aspect of Nagpur Agreement. Important decisions contained in the Nagpur Agreement, which pertain to governance are as follows:

1. *“For the purpose of all types of development and administration, the three units, namely, Vidarbha, Marathwada and the rest of Maharashtra will be retained as such.*
2. *Subject to the requirements of a single Government, the allocation of funds for expenditure over the different units will be in proportion to their population but, in view of the undeveloped conditions of Marathwada, special attention will be given to promote all-sided development of that area. A report in this behalf will be placed before the State Assembly every year.*
3. *The three units will be given representation in proportion to population in (a) the composition of the Government, (b) the admission to all educational institutions having training facilities in vocational and scientific professions or other specialized training, and (c) the services, of all grades, under Government or Government-controlled enterprises.*
4. *The High Court of the new State will have its principal seat at Bombay and a second seat at Nagpur. The Bench at Nagpur will ordinarily function for Vidarbha area. While making recommendations of High Court Judges it shall be seen that Vidarbha and Marathwada areas get adequate representation in respect of appointments from the services and the bar.*
5. *Subject to the efficient conduct of administration of a single State, the advantages derived by the people of Vidarbha from Nagpur as the capital of their State shall be preserved to the extent possible. The Government shall officially shift to Nagpur for a definite period and at least one session of the State Legislature shall be held every year in Nagpur.*
6. *The administration will be decentralized as an effective means of better associating the people of different units with the administration”.*²

6.1.2 Article 371(2) of the Constitution

The States Reorganization Commission (1955) recommended the formation of separate Vidarbha but, it was not accepted by the Parliament. However, the spirit of Nagpur Agreement was given constitutional recognition through inclusion of Article 371(2) in the Constitution Ninth Amendment Act, 1956. Article 371 (2) reads as follows:

“Notwithstanding anything in this Constitution, the President may by order made with respect to (the State of Maharashtra or Gujarat), provide for any special responsibility of the Governor for:

² Fact Finding Committee on Regional Imbalance in Maharashtra, 1984:4

- (i) *the establishment of separate development boards for Vidarbha, Marathwada (and the rest of Maharashtra or, as the case may be,) Saurashtra, Kutch and the rest of Gujarat with the provision that a report on the working of each of these boards will be placed each year before the State Legislative Assembly;*
- (ii) *the equitable allocation of funds for developmental expenditure over the said areas, subject to the requirements of the State as a whole; and*
- (iii) *an equitable arrangement providing adequate facilities for technical education and vocational training, and adequate opportunities for employment in service under the control of the State Government in respect of all the said areas, subject to the requirements of the State as a whole”.*³

6.1.3 Sanyukta Maharashtra's Stand on Regional Governance

In 1960, the reorganization of provinces led to the formation of Sanyukta (unified) Maharashtra. The stand of the Sanyukta Maharashtra on the regional governance was very well reflected in the speech of Shri Yashwantrao Chavan the first Chief Minister of Maharashtra.

“Likewise, I wish to assure the people of Vidarbha that they need have no apprehension that their legitimate interests will not be protected; on the other hand, they will be zealously guarded and will be treated as a sacred trust of the future Maharashtra Government. The terms of what is known as the Nagpur Pact will be honoured and wherever possible something more will be done.

Perhaps the House is not aware that the Nagpur Pact applies as much to Marathwada as to Vidarbha and I would like to state that the terms of the Nagpur Pact so far they relate to Marathwada will equally be fulfilled. To reassure our brothers in these regions, I have placed on the Table of the House a statement of policy regarding Bombay City, Vidarbha and Marathwada, which I have just lead out to you. I have taken the opportunity to stress the need for the planned development of the Konkan districts and scarcity areas of Maharashtra as well.

*In this connection I would like to draw the attention of the House to Article 371 of the Constitution which contains special provisions for Bombay and other States. That Article envisages separate Development Boards, equitable allocation of funds for development expenditure, equitable arrangements for technical education and vocational training and adequate opportunities for employment in State Services. The protection afforded by this Article will continue in the residual State of Bombay, that is Maharashtra”.*⁴

6.1.4 Shift of Focus from Region to District

However, there was a shift in 1969 from region to district as the unit of planning and development. This led to the formation of District Planning & Development Committees (DPDCs) and also a separate District Annual Plan. Though it helped in taking resources closer

³ Article 371 (2), Part XXI Temporary, transitional and special provisions. Special provision with respect to the States of Maharashtra and Gujarat. The Constitution of India

⁴ Fact Finding Committee on Regional Imbalance, 1984: 6

to the people it shifted the focus from region to district. Initially, the district plan had about 60% share of the overall State Plan. But it steadily reduced over the years and at present the share of district plan is only about 11%. Another important milestone was the establishment of Panchayati Raj based on the reports of Balwantraji Mehta Committee and P. B. Patil Committee. The Panchayati Raj system too shifted the focus from regions to districts. The 73rd and 74th Constitutional Amendments further reinforced the efforts for democratic decentralization and made the district a key unit of administration, local governance, planning and implementation. It led to a restructuring of DPDCs into District Planning Committees (DPC) consisting of elected members of rural and urban panchayats.

6.1.5 Fact Finding Committee

In 1984, Shri Vasantdada Patil established a Fact Finding Committee under the chairmanship of Shri V. M. Dandekar, to assess the level of development in three regions:

*“The Committee undertook a sectoral study of backlog in nine developmental sectors namely (1) Roads (2) Irrigation (3) Village Electrification, (4) General Education (5) Technical Education, (6) Health Services, (7) Water Supply, (8) Land Development Soil, and Water conservation and (9) Veterinary Services and submitted its report in 1984. The sectoral backlog calculated by the Dandekar Committee as on 30.6.1982 was Rs.3186.77crore. Vidarbha Region was the worst sufferer with the sectoral backlog as on the said date being Rs.1,246.54crore the backlog in the irrigation sector as on 20.6.1982 was Rs.1,385.93crore. The backlog of irrigation sector in Vidarbha region was Rs.527.31crore that is 38.05% of the total sectoral backlog. The report of the Dandekar Committee was not formally accepted by the Government of Maharashtra but made small allocations ranging from Rs.200crore in 1985 to Rs.500crore in 1993-94 for correcting the imbalance. Though the Committee had recommended that 85 percent of the yearly budgetary allocations might be used for removal of backlog, this recommendation was not implemented by the State Government”.*⁵

6.1.6 Ad-hoc Grants for Backward Regions

Sixth Plan onwards certain dedicated grants were kept aside for development of three regions:

*“During Sixth plan (1980-85), State Planning Department undertook a study on district-wise development achievement and pointed to the noticeable disparities across regions in irrigation, roads, public health and technical education sectors. During the sixth plan, Government announced a 38-point, a 35-point and a 17-point development programmes for the three regions; Vidarbha, Marathwada and Konkan respectively for the removal of regional imbalances”.*⁶

*“Though, the Government of Maharashtra did not officially accept the recommendations of FFC (1984), some plan funds were being allocated each year for removal of infrastructure backlogs, in keeping with its overall findings. During 1985-1994, a sum of Rs. 3156 crore was spent”.*⁷

⁵ Planning Commission's Report of Fact Finding Team on Vidarbha, 2006: 70

⁶ Performance Evaluation of Statutory Development Boards in Maharashtra, 2003: 2

⁷ Performance Evaluation of Statutory Development Boards in Maharashtra, 2003: 33, 34

The Table showing outlay provided and actual expenditure for removal of backlog from 1985-86 to 2008-09 is given in Annex 6.1.

6.1.7 Establishment of Regional Development Boards

Establishment of the three Regional Development Boards was a landmark in the efforts for balanced regional development:

*“On 26th July, 1984 both Houses of Maharashtra State Legislature passed unanimous resolutions requesting the President of India to make an order in exercise of the powers conferred on him under Article 371(2) for the establishment of separate Boards for Vidarbha, Marathwada and the rest of Maharashtra”.*⁸

*“In discharge of the Special Responsibility conferred on the Governor by virtue of the Presidential Order, the Governor of Maharashtra issued the Development Boards for Vidarbha, Marathwada and the rest of Maharashtra Order, 1994 (hereinafter referred to as the 1994 Order)”.*⁹

After constituting the three Boards on 30th April 1994 with their headquarters at Nagpur for Vidarbha, Aurangabad for Marathwada and Mumbai for Rest of Maharashtra, the Governor issued detailed orders and guidelines for the proper functioning of the Statutory Development Boards:

“Development Board functions as laid down in the Governor's order are:

1. *To ascertain relative levels of development in different sectors in relation to its area on the basis of appropriate indicators, having regard to the levels of development in the state as a whole.*
2. *To assess the impact of various development efforts in removing backlog and achieving overall development within its area.*
3. *To suggest levels of development expenditure over the area of Development Board during a plan period including annual plan, and*
4. *To prepare an annual report on its working and to send it as far as possible within three months after the end of every financial year to the Governor for placing it before the Maharashtra State Legislature”.*¹⁰

The Boards were given a fund of Rs. 100 crores each to undertake pilots and targeted interventions for regional development:

“Special Fund of Rs. 100 crore was being allocated to the three Development Boards every year since 1995 –96 till 2010-11 for small and useful work of Development in nature. These funds are allotted in proportion to their shares in backlog and population (43.86% in Vidarbha, 27.28% in Marathwada and 28.86% in RoM) and were utilized by the three boards to a large extent for strengthening social infrastructure facilities in

⁸ Planning Commission's Report of Fact Finding Team on Vidarbha, 2006: 69, 70

⁹ Planning Commission's Report of Fact Finding Team on Vidarbha, 2006: 71

¹⁰ Planning Commission's Report of Fact Finding Team on Vidarbha, 2006:82

*education and health institutions, road development, social welfare and irrigation facilities”.*¹¹

6.1.8 Indicators and Backlog Committee

After the Fact Finding Committee, a major exercise of looking into the issues of regional imbalance was carried out by the Indicators & Backlog Committee. The Committee submitted its report to the Governor on 11.7.1997. The government accepted the report in principle. However, the Government recommended that the views of the departments in the sectors relating to irrigation, higher and technical education, energization of pumps and land development soil and water conservation should be referred to the indicators and Backlog Committee for consideration while calculating the physical and financial backlog. The Hon'ble Governor referred the views of the aforesaid departments to the reconstituted indicators and Backlog Committee which was asked to finalize region-wise physical and financial backlog as on 1.4.1994 in the aforesaid sectors. The reconstituted Indicators and Backlog Committee submitted its report to Hon'ble Governor on 27.09.2000 and the same was accepted by the Government of Maharashtra.¹²

6.1.9 Trends of Backlog Between 1984 and 1999

Between 1984 and 1999 the backlog showed an upward trend instead of getting corrected. A special note of this trend was taken by the Governor in 2000:

*“The regional imbalances had been increasing since the backlog was first identified by the Fact Finding Committee in 1984 and subsequently by the Indicators and Backlog Committee in 1994. The share of Vidarbha in the overall backlog has increased from 39.12% in 1984 to 47.60% in 1994 and further to 48.26% as on 1 April 2000. Similarly, in case of Marathwada region, it has increased from 23.56% in 1984 to 28.77% in 1994 and further to 29.62% as on 1 April 2000. On the other hand, the share of rest of Maharashtra region in the overall backlog has decreased from 37.32% in 1984 to 23.62% in 1994 and further to 22.12% as on 1 April 2000. Thus, the regional disparity continued to increase over the years in Vidarbha and Marathwada despite special allocations for backlog removal. The regional disparity increased more conspicuously in the irrigation sector. The proportion of backlog in the irrigation sector in the overall backlog of Vidarbha had increased from 42.30% in 1984 to 61.64% in 1994 and further to 68.47% as on 1 April 2000. Similarly, in the case of Marathwada region, the same has increased from 42.18% 1984 to 59.96% in 1994 and further to 61.29% as on 1 April 2000. On the other hand, the proportion of backlog in the irrigation sector in the overall backlog of the rest of Maharashtra region has decreased from 45.56% in 1984 to 27.65% in 1994 and further to 18.42% as on 1 April 2000”.*¹³

¹¹ Planning Commission's Report of Fact Finding Team on Vidarbha, 2006:85

¹² Performance Evaluation of Statutory Development Boards in Maharashtra, 2003

¹³ Background Note to Governor's Directives, <http://rajbhavan.maharashtra.gov.in>

The Report of the Planning Commission's Fact Finding Committee on Vidarbha (2006) has also made similar observations about the trends of backlog between 1984 and 1999:

*“The conclusions reached by the reconstituted indicators and Backlog Committee reveal that from 31.3.1984 to 31.3.1994 the backlog of Vidarbha and Marathwada Regions of the State of Maharashtra continued to increase while the backlog of the rest of Maharashtra showed a declining trend. As on 31.3.1984, the backlog in the irrigation sector in Vidarbha was Rs.537.31crores or 38.05% which rose to Rs.4,083crore or 55.05% and in comparison the backlog or Rest of Maharashtra which was Rs.541.90crore as on 31.3.1984 rose only marginally to Rs.934crores. More importantly, in percentage terms the backlog of the rest of Maharashtra in irrigation sector drastically dropped from 39.10% as on 31.3.1984 to 12.59% as on 31.3.1994. While the irrigation backlog in Vidarbha has increased from 38.05% in 1982 to 62.20% in 2002 the irrigation backlog in rest of Maharashtra has progressively declined from 39% in 1982 to 4.73% as on 1.4.2002”.*¹⁴

6.1.10 Governor's Directives for Equitable Resource Allocation

After the formation of the Development Boards, the Governor started region wise general plan allocations as well. In the Annual plan 1995-96, the Governor for the first time made an equitable allocation of overall plan funds among the three Boards. Although there was no particular formula for allocation of funds among the three regions, the Governor took into account the factors such as population percentage of the three regions to the total population of the State as per 1991 Census and quantum of backlog identified by the FFC. Funds allocated to the Development Boards were made non-divertible from the area of one Development Board to another. To ensure this, it was made mandatory on the part of the State Government to reflect the funds allocated by the Governor in the annual financial statements placed before the State Legislature. The directives are issued every year under clause 7 of the 1994 Order regarding allocation of plan funds.

*“The first of such orders separately allocating funds for the three development boards were issued for the Annual Plan 1995-96. This system continued till 2001-02. Till that year, the region-wise allocation for nine identified sectors was ordered by the Governor. The nine sectors are (1) irrigation; (2) roads; (3) general education; (4) technical education & vocational training; (5) health services; (6) water supply – rural and urban; (7) land development, soil and water conservation and horticulture; (8) veterinary services and (9) electrification of pumps”.*¹⁵

*“It was also stipulated that the sectoral allocation for backlog removal within the region should be done in proportion to the remaining backlog in the respective sectors as on 1 April, 2005”.*¹⁶

“Within the overall allocation for the removal of backlog in the areas under the respective Development Boards, as mentioned above, the Scheme-wise outlays should be made by

¹⁴ Planning Commission's Report of Fact Finding Team on Vidarbha, 2006:73

¹⁵ Planning Commission's Report of Fact Finding Team on Vidarbha, 2006: 74

¹⁶ Planning Commission's Report of Fact Finding Team on Vidarbha, 2006: 75

*the Planning Department based on the recommendations made in consultation with the respective Development Boards and the concerned District Planning Committees in respect of district level schemes and the concerned Departments in respect of State Pool and State Level Schemes. After deducting allocation for the Irrigation Sector and funds for removal of backlog in other backlog sectors, the divisible portion of the remaining Plan outlays should be distributed amongst the three regions in proportion to the overall population of the respective regions. The funds from backlog to Non-backlog and from the area of one Development Board to that of another Development Board shall not be diverted”.*¹⁷

6.2 Estimation of Divisible and Non-divisible Outlay

6.2.1 Governor's Rules for Allocation of State's Resources

In August 1994, the Governor of Maharashtra made the ‘Development Boards for Vidarbha, Marathwada and the rest of Maharashtra Rules’. The Rules laid down a sound foundation for equitable distribution of State's resources among the three regions:

*“The Governor shall allocate funds amongst the Boards, after taking into consideration the requirement of the State as a whole and the recommendations of the Board”.*¹⁸

Section 7(5) of the aforesaid Rules elaborates the meaning of the expression 'requirements of the State as a whole', thus laying down certain principles for calculation of the non-divisible outlay:

“While working out the likely amount for development expenditure across the three regions, due consideration shall be given to the amounts required by the State Government for the following items of expenditure which shall be set aside –

- (i) Charged expenditure,*
- (ii) Non-Plan expenditure,*
- (iii) Outlay on Externally Aided Programmes,*
- (iv) Outlay on Centrally Assisted Programmes,*
- (v) Programmes and Projects which benefit the areas extending beyond one Board or the entire State and wherein the investment is indivisible,*
- (vi) Expenditure related to programmes and projects related to investments by either domestic or international private sectors,*
- (vii) Expenditure related to implementation of InterState Agreements or Inter-State Awards and Court Decisions.*
- (viii) The funds to be allocated to local bodies in pursuance of Government decisions on the recommendations of the State Finance Commission constituted by the Governor in pursuant to clause (1) of Article 243-I of the Constitution.*

¹⁷ Planning Commission's Report of Fact Finding Team on Vidarbha, 2006: 75,76

¹⁸ Rule 7 (3) of the Governor's Rules, 1994, <http://rajbhavan.maharashtra.gov.in>

- (ix) Any other item of expenditure which may be deemed fit as requirement of the State as a whole by the Governor”.¹⁹

6.2.2 Trends in the Proportion of Divisible and Non-divisible Outlay

While items (i) to (viii) in the aforesaid Rules are self-explanatory, item (ix) leaves a lot of scope for discretion. As a result, over the years there has been a great variation in the proportion of divisible and non-divisible components of the state plan. Trends in the Proportion of Divisible & Non divisible Allocation can be seen in Annex6.2. From this table it can be seen that share of divisible plan was as high as 91.31% in the year 2008-09 with our allocation of Rs. 16827 crore against a total plan (Excluding SCSP, TSP & DPC) of 18429 crore. and was the lowest (64.63%) in 2004-05 with just Rs. 4995 crore allocated against the plan (Excluding SCSP, TSP & DPC) of Rs. 7729 crore. It is clear that divisible and non-divisible shares of plan have not followed a definite pattern so far.

6.2.3 Governor's Observations About Divisible and Non-divisible Outlay

The Governor has made an observation regarding allocation of divisible & non-divisible resources:

*“The Governor has observed that the non-divisible portion of the Annual Plan 2011-12 is around Rs. 10,813 crore. This constitutes nearly 26% of the Annual Plan of the State. Further, the Governor has observed that certain items of expenditure are classified as non-divisible whereas it would have been easily possible to classify the expenditure on these items region-wise. For example, the budget allocations in the Urban Development sector for the Jawaharlal Nehru National Urban Renewal Mission (Rs. 2500 crore), Maharashtra Nagarothan Abhiyaan (Rs. 250 crore) and the UIDSSMT scheme (Rs. 400 crore) have been shown as non-divisible. It should be possible to identify the municipal corporation or council which actually utilized these grants. The percentage of expenditure under the non-divisible head, which is seen to be unduly high, might lead to distortions in the overall region-wise distribution of outlays. The Governor hereby directs the Planning Department to re-examine the items of expenditure which have been classified as non-divisible in the Budget documents and suitably modify the classification wherever possible. In some cases, this classification may not be possible at the beginning of the financial year. If the item of expenditure is such that it can be classified as divisible after the end of the financial year, the Planning Department should calculate the region-wise expenditure of such items based on the expenditure data of the previous financial year. This exercise should be undertaken in consultation with the concerned Department. A report for such an exercise for the financial year 2011-12 should be submitted for the information of the Governor by July 2012”.*²⁰

6.2.4 Lack of Clear Guidelines for Divisible and Non-divisible Expenditure

Even though the division of divisible and non-divisible expenditure is made as per Section 7(5) of the Governor's Rules, 1994, an examination of the current planning process and discussion

¹⁹ Rule 7(5) of the Governor's Rules, 1994, <http://rajbhavan.maharashtra.gov.in>

²⁰ Governor's Directives for Year 2012-13, <http://rajbhavan.maharashtra.gov.in>

with the State Planning Department has shown that there are no operational guidelines in the form of Government Resolution for departments to estimate the divisible and non-divisible expenditure. There is a need for a systematic and step by step procedure for departments to arrive at the requirement of divisible and non-divisible resources. The activities to be taken from the non-divisible funds should be clearly defined by respective departments and should be approved by the Planning Department.

6.3 Distribution of Divisible Outlay Among Three Regions

6.3.1 Governor's Principles for Allocation of Divisible Outlay

The Governor has directed that once the allocation required for removal of backlog has been determined then the remaining divisible plan funds should be distributed among the three regions on the basis of their population:

“After deducting allocation for the Irrigation sector and funds for removal of backlog in the other backlog sectors, the divisible portion of the remaining Plan outlays should be distributed amongst the three regions in proportion to the overall population of the respective regions. While doing so, the data of the 2011 census should be taken into consideration. Within this region wise allocation of the remaining plan outlays, there would be flexibility to have sector wise distribution depending upon the needs and development opportunities of respective regions in those sectors. However, the sum total of all the sectoral outlays for a region should be within the overall ceiling of the share of the respective regions in the remaining plan outlay.

*There shall be no diversion of funds from backlog districts to non-backlog districts and from the area of one Development Board to another without prior approval of the Governor”.*²¹

6.3.2 Trends in Region Wise Allocation of Divisible Outlay

The Governor has set population (after deducting irrigation and backlog funds) as the benchmark for distribution of divisible resources among the three regions. The table showing the Annual Plan (2001-02 to 2012-13) can be seen at Annex 6.2.

6.3.3 Trends in the Plan and Non-plan Outlay

The non-plan outlay of the state budget is much larger than the plan outlay. In 2002-03 the share of non plan expenditure in the total expenditure was as high as 91.6%. However, over the years the share of non-plan expenditure has come down and in 2010-11 it was 72.5%. Even then, it amounts to more than two thirds of the entire budget. The table showing the trend of Plan & Non-Plan Expenditure is given at Annex 6.3.

There is a need to examine the present classification of expenditure under the non-plan budget. Thus departments need to do a strict scrutiny of the items and outlay kept as non plan and these items also need to be scrutinized by the Planning Department with the help of suitable experts. Maximum allocation should be made for plan outlay.

²¹ Governor's Directives, 2012-13, <http://rajbhavan.maharashtra.gov.in>

6.3.4 Tracking of External Funding/Assistance

The funding received from the Government of India under Centrally Sponsored Schemes, Central Sector Schemes and from other externally funded projects is significant. The distribution of these funds to the three regions needs to be tracked so as to optimize the total resource pool available for development of regions. Table 6.1 gives an idea about the volume of funds entering the State through the Centrally Sponsored Schemes, Central Sector Schemes and from other externally funded projects:

Table 6.1
CSS/ External Funding During 2012-13

(Rs. Crore)				
Sr. No.	Scheme	External Share	State Share	Total
1	2	3	4	5
1	Centrally Sponsored Schemes through budget	5834	750	6584
2	Centrally Sponsored Schemes outside budget	10970	2218	13188
3	Centrally Assisted Scheme	5988	167	6155
4	Externally Aided Projects	775	67	842
5	Domestic Financial Share	718	26	743
Total		24285	3228	27512

Source: Annual Plan 2012-13, Planning Department, GoM

It is imperative that while planning for these schemes the perspective of regional balance is kept in mind and region wise outlays and expenditure is monitored. It is recommended that the resource sharing formula proposed by the committee is made applicable to the external funds.

6.3.5 Governor's Observations about the Compliance of Directives

The Governor has made detailed observations in his directives for the year 2012-13:

“The Governor has expressed concern over the large unspent balances with the Irrigation development Corporations at the end of the financial year. The WRD has communicated by letter dated 15.03.2012 that the unspent balances with the Corporations was Rs. 2438 crore at the end of the FY 2009-10 and Rs. 3496 crore at the end of FY 2010-11. These balances are of the tune of 35% and 45% of the total plan size of the respective years. Moreover, there is a discrepancy in the figures of unspent balances of Rest of Maharashtra Development Board that have been communicated by WRD for the FY 2009-10. The unspent balance of the Rest of Maharashtra Development Board was initially communicated as Rs. 467 crore by WRD (by letter dated 13.05.2009). This figure has been subsequently revised by WRD to Rs. 1007 crore by letter dated 15.03.2012. The Governor has directed the Chief Secretary to examine the reasons for the large unspent balances with the Irrigation Corporations and also the reasons for the discrepancy in the figures reported by the WRD. The Chief Secretary should ensure that corrective steps are taken by the concerned Departments in this regard and an action taken report should be submitted for the information of the Governor within 3 months.

*In compliance of para 35 of the Governor's Directives dated 10th March, 2011, the Planning Department has communicated that a mechanism has been worked out to capture details of region-wise outlays and expenditure for all the sectors, including irrigation. This mechanism is expected to be activated from 1st April 2012. The Planning Department, in co-ordination with the Finance Department should publish these figures on a quarterly basis. This will help to bring about greater transparency in the implementation of the Directives. Since non-plan developmental expenditure also falls within the ambit of the special responsibility assigned to the Governor by the Presidential Order dated 9th March 1994 and the provisions of sub clause 2 (b) of Article 371 of the Constitution, the Governor has directed the Planning Department to include non-plan developmental expenditure while working out the above details of region-wise allocation and expenditure for all sectors”.*²²

Constitutional arrangement under Article 371(2) was made to rectify the developmental imbalance. However, the backwardness of Vidarbha and Marathwada still persists. This is attributed to diversion of funds (allocated for backward regions) to the Rest of Maharashtra. The diversion is substantiated by the non-implementation of Governor's Directives and Report of the Fact Finding Team (May 2006) of the Planning Commission.

The observations in the Governor's Directives (2009-10) can be briefly stated as:

1. Planning Department to investigate the diversion of funds from Vidarbha to Western Maharashtra and fix responsibility and recommend the action to avoid such situation in future and submit report to the Governor.
2. A quarterly report shall be submitted to Governor after monitoring outlays, disbursement and expenditure of funds by a committee comprising Secretary Planning, Finance and Water Resources.
3. Planning Department to commission detailed study of cost and time over runs of on going irrigation projects and submit report to Governor in six months.
4. Planning Department to indicate separately under each category, region-wise expenditure for all sectors to assess short fall or excess expenditure.

Governor' Directives 2011-12 (Page 14) points out that the reports regarding fixation of responsibility for diversion of irrigation funds, impact assessment study and time and cost overruns, have not been submitted as yet. The Governor's Directives 2013 (Para 39) has once again expressed concern about the non-compliance of the 2009 directives.

The Report of the Fact Finding Team (May 2006) of the Planning Commission corroborates the diversion of resources. It states that “among the officials and the official State machinery, it is felt that the Governor has finally been able to achieve some discipline regarding observance by the Council of Ministers in introducing the backlog provisions and provisions for backward regions as per the Constitutional provision of Article 371 (2). However, the system is not geared up for effective implementation. The annual funds surrendered by Vidarbha and Marathwada are then reallocated to the Rest of Maharashtra through supplementary budgets (Page 12).

²² Governor's Directive, 2012-13, <http://rajbhavan.maharashtra.gov.in>

The committee could not lay its hands on the gap between amount disbursed to each region and actual expenditure incurred by each region over at least last ten years. The finance department's explanation was that no such full-proof system to track region wise expenditure was in place till 2012-2013. And that now, they have introduced BEAMS to capture such type of expenditure. The committee has taken note of this and has made recommendations about non diversion of funds from one region to another.

6.4 District Sector Outlay

The annual plan of the state is further divided into state sector and district sector plan outlays. The state sector plan outlay mainly consists of state schemes, which are implemented primarily by the state departments. The district sector plan outlay mainly consists of the district schemes for which the plan and budgets are prepared by the District Planning Committees. The current thinking on decentralization and devolution suggests that the size of district plan should be progressively increased to ensure that adequate resources flow to all districts in the State through a dedicated district sector outlay. Therefore, in the context of balanced regional development, it becomes important to examine the trends of state and district pool.

6.4.1 District Planning Mechanism

Maharashtra has a strong tradition of district planning. During the tenure of Shri Vasantao Naik as the Chief Minister of Maharashtra, the government adopted a policy of district as a unit for formulation of Five Year Plans and Annual Plans. For this purpose a District Planning and Development Council was constituted in every district vide the Planning Department's G.R. dated 1/10/1974. In 1998, an enactment for replacing DPDC with an elected District Planning Committee as per article 243 ZD of the 74th Amendment to the Constitution was passed by the State. However, DPCs were actually constituted only in 2008. The District Guardian Minister is the Chairperson of DPC whereas the District Collector is its Member Secretary. The State Government has recently declared 50% reservation for women representatives in DPC.

As per the policy of decentralization, DPC is expected to facilitate the preparation of participatory plans by the rural and urban panchayats and then consolidate those plans into an Integrated District Plan. The plan consolidated by DPC is finalized in state level meeting held under chairmanship of Hon. Minister (Planning). The approved outlay of district plan is included in the State budget. These approved district plans are consolidated and submitted to Legislature. Provision of funds for on-going works are made on priority and then the new works are proposed. Works taken under the district plan need to be completed within two years. Powers of re-appropriation of funds are delegated to the DPC.

6.4.2 District Sector Outlay

The district sector pool consists of three major streams, i.e., district outlays of general plan, Tribal Sub Plan (TSP) and Schedule Caste Sub Plan (SCSP).

General Plan: The District Planning Officer plays a nodal role in the budgeting as well as disbursement and monitoring of the general plan component of district sector outlay under the

superintendence of District Collector and the overall direction of DPC. The formula for allocation of district sector funds from the general plan to various districts is given in Table 6.2.

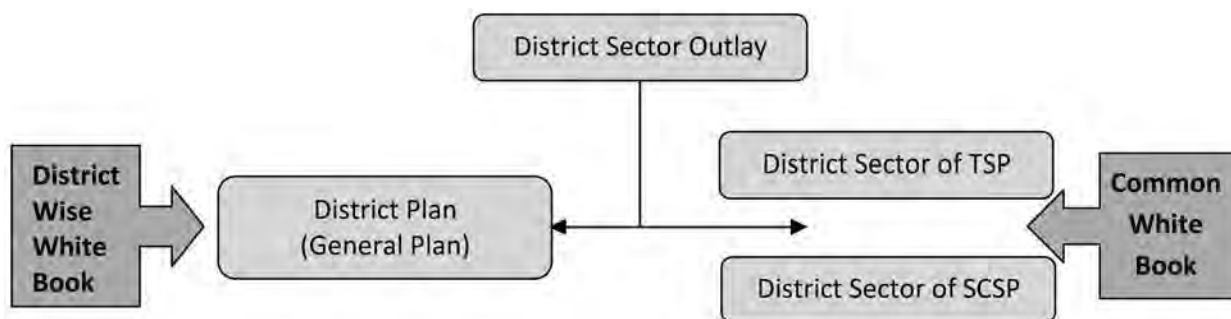
Table 6.2
Formula for Allocation of Funds to DPCs

Criteria	Weight (%)
1	2
Total general population	30 %
Total rural population	20 %
Area of District	30 %
HDI of District (1-)	20 %

Source: State Annual Plan 2012-13, GoM

TSP & SCSP: The district sector outlay of TSP and SCSP is published in a common ‘White Book’ at the State level. The Project Director, ITDP, and the District Social Welfare Officer are respectively the deemed planning officers for TSP and SCSP. Structure of district sector outlay is at Fig. 6.1

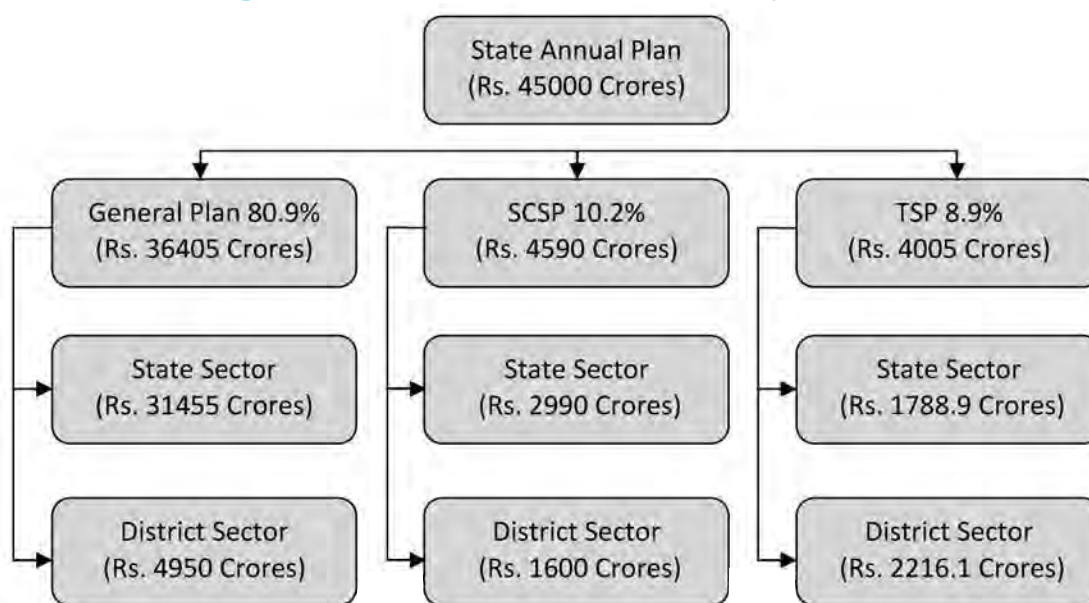
Figure 6.1
Structure of District Sector Outlay



6.4.3 Trend of State Sector and District Sector Outlays in Maharashtra

The proportion of state and district sector allocations for 2012-13 can be seen in the Figure 6.2.

Figure 6.2
Proportions of State and District Sector Outlays: 2012-13



Source: State Annual Plan 2012-13, GoM

Annex 6.2 will also show the variations in the DPC allocations over the years 2001-02 till 2012-13. The DPC outlays were distributed among the districts according to the formula decided in 1974-75 till 2009-10. The State Government has revised the said formula from the 2010-11. However, there are no fixed principles based on which the division of state and district plan pool is decided. The committee has now proposed a floor level proportion of resources to be devolved to districts.

6.4.4 Block Level Planning

It is being recognized increasingly that district is too big a unit for planning and balanced development. Often there is considerable heterogeneity within districts in terms of agro-climatic, economic and social-cultural aspects, which makes it difficult to plan effectively for the district as a whole. District also has a multiplicity of agencies such as revenue administration, Zilla Parishad, DRDA, district offices of state departments, etc. It is difficult to ensure coordination among all these agencies. District resources get too fragmented when distributed to many blocks and numerous villages. Thus, resource distribution also tends to become ad-hoc and unequal on account of too many demands on limited resources.

As a part of process to improve Human Development Index (HDI) of the State, the Government of Maharashtra has established 'Maharashtra Human Development Mission' in 2006 to improve HDI. Block has been adopted as the unit for human development interventions:

“Considering the better effects of schemes implemented by Human Development Mission from 2011-12, the Government has decided to consider 'Taluka' instead of 'District' as a component for human development. Accordingly, it has been decided to broaden the base

*of Human Development by implementing the programme in most backward 125 Talukas of the State”.*²³

During field visits particularly in Western Maharashtra it was brought to the notice of the committee that there is considerable heterogeneity within a district in terms of development. Hence, even the elected representatives aired their demand to consider block as the unit of planning rather than district. In fact, this issue was also debated in Dandekar Committee. This committee had commissioned a study (Lalwani), which extensively dealt with the issue of different units of planning including the block plan. The committee is of the considerate opinion that at this stage it is not feasible to have the block as unit of planning. But considering the fact that the district is quite heterogeneous and blocks are more homogeneous in their development status, the principle of decentralization should logically apply below the district to the blocks too. Hence the committee recommends that the State set up a Block Planning Committee in each block and part of the resources be devolved to the Block Planning Committees. As that of a Collector at the district level, the State can designate Deputy Collector level officer as the member secretary and nodal officer to coordinate and implement the Block Level Plan.

6.5 Role of the State Finance Commission

With the 73rd and 74th amendment enhanced role and significance of Panchayat Raj Institutions and local government has been enshrined in the constitutional architecture of governance. A rapidly urbanizing state like Maharashtra should carry forward its previous leading position in decentralizing the administrative functions, responsibilities and fiscal resources. The spirit of these amendments would be truly served by undertaking definitive steps to transcend agency based delegation approach. In any multilayer forms of government and governance and resource efficiency, equality and necessary delegation, devolution and decentralization have to be appropriately orchestrated.

Presently, numbers of responsibilities are transferred to lower or sub-level governments without much loss of control over line authorities. Over the years effort should be made to enable and empower sub-level governments. Availability of capable and trained administrative manpower and local responsible political leadership are necessary for successful and deepened decentralization.

Primary motive behind decentralization is to match the diversity of 'choice' in local public goods with necessary flexibility in a design of the spending programs without allowing wasteful diversity in distortive taxation. It should be recognized that as the rapidly urbanizing population is expected to generate different sizes of urban township with great deal of diversity in sizes and local public goods requirements. In all the urban centers, investment requirements in necessary infrastructure will be growing rapidly. With large amount of capital intensive facilities building up over time the need to maintain and conserve them will grow exponentially. Hence the non-plan expenditures at all level of local governments would be rising fast enough. Some of these will have to be financed through the appropriate local taxes. At the same time, the appropriate share in the revenues of higher (central) level of government should be available. The wisdom of vertically centralized efficient revenue collection counter-balanced with mandatory and equalizing horizontal sharing is accomplished by constitutionally obligatory appointment of State Finance Commission.

²³ Annual Plan 2012-13, GoM, P 53

Many of the state governments have yet not adhered to this logic with apparent sincerity and commitment. This prompted XIIIth Finance Commission to prepare a template on functioning and minimum adherence to the spirit of the Constitutional provisions. We may observe that the experience of Maharashtra is not remarkably different and superior from any other states.

As indicated above economy of Maharashtra will be a rapidly growing and diversifying in rural as well as urban areas. Developmental local infrastructural investments (mostly arising out of 'plan expenditure') always lead to creation and accumulation of large pool of assets. These need to be maintained and upgraded. In the absence of appropriate mechanism for funding such non-plan expenditures on devolutionary basis will create enormous economic decay, waste and political tensions. Hence it would be prudent to take the working of the State Finance Commission mechanism more seriously and responsibly.

We have recommended different institutional-cum-organizational arrangement of the regional boards. These would be primarily dealing with new investments (capital expenditures) and accompanying revenue expenditures. A successful functioning of the proposed structure presumes a simultaneous and complimentary functioning of the State Finance Commission. On an average the non-plan expenditures account for 70 to 75 per cent of the total expenditures. The non-plan expenditure of the third level of government needs to be addressed more seriously and systematically through the constitutional mechanism of State Finance Commission.

6.6 Region as the Unit of Planning and Development

The Nagpur Agreement envisages region as a unit of development: "For the purpose of all types of development and administration, the three units, namely, Vidarbha, Marathwada and the rest of Maharashtra will be retained as such".

Three Regional Development Boards have been established in Maharashtra to ensure proper attention to the specific needs of each region in the processes of planning, implementation and monitoring/evaluation. However, the Planning Commission's report of Fact Finding Team on Vidarbha observes that the existing arrangement of Regional Development Boards is useful but not adequate:

"The present set up of the Statutory Development Boards does not seem to be the appropriate mechanism for achieving the planned development of the Vidarbha and Marathwada regions".²⁴

Similarly, the report titled 'Performance Evaluation of Statutory Development Boards (SDBs) in Maharashtra (2003)' by the Programme Evaluation Organisation, Planning Commission (GoI) has also brought out certain limitations of the existing structure and functioning of the Regional Development Boards. It's important to consider that these are essentially advisory bodies and may not be able to directly influence the development process of the State. Their performance needs to be adjudged in view of the fact that the actual decision making is done by Planning, Finance and line departments and hence their advice may not always be translated into actual practice. Also, the Boards are not equipped with necessary infrastructure facilities to be able to identify their regions backwardness periodically on their own. Nor do they have the financial powers to allocate the requisite amount to clear the accumulated backlog. At best, the Boards can articulate and highlight development issues in their

²⁴ Planning Commission's Report of Fact Finding Team on Vidarbha, 2006, pp 86

resolutions and reports and make recommendations regarding backlog removal and elimination of regional disparities.²⁵

Based on the above discussions it is necessary to:

1. Restructure the Regional Development Boards
2. Devolve resources to regions
3. Devolve more resources to districts
4. Devolve resources to blocks
5. Rationalize the division of plan and non-plan

6.6.1 Proposed Institutional Set Up for Regional Governance

Thus, there is a need to revamp the Regional Boards in terms of both their structure and functions. The preceding sections reveal that even though comprehensive directives are issued by Governor the planning is centralized (other than district plan) and further the regions have no say in terms of planning. The conventional process of preparing and approving the plan by State Departments and Planning Department is being followed even now. Thus, the regional demands and needs do not get reflected in the plans in true spirit of the Nagpur Agreement. The whole process still remains a State level departmental exercise. Though the region wise break up of outlay is shown there is no mechanism to incorporate the regional demands. In fact, the exercise seems to be more of a disaggregation of figures rather than actual decentralized regional exercise. Further, even though government is making efforts to compile the expenditure region wise the actual expenditure as compared to outlays could not come before the committee.

Thus, there is need to conduct the planning exercise in the letter and spirit of Nagpur Agreement as well as the Governor's directives. This can happen only through major governance reforms in the preparation of plans and functioning of the Boards. The ultimate aim of balanced regional development will not be achieved by merely carrying out arithmetic exercise of allocating resources at State level but only by devolving funds, functions and functionaries at the regional level. Thus the committee recommends the following three fundamental changes:

1. The way the Planning Commission of India fixes the plan size, based on the proportion of the divisible pool for each region the Planning Department should fix the plan size for each of the three regions. Once this is done, each Regional Development Board will be competent to prepare Five Year and Annual Plan.
2. Adequate manpower be provided to the Regional Development Boards for preparation, implementation and monitoring of the plan.
3. Government should set up a high power committee to delegate administrative and financial powers so as to enable the Regional Development Board machinery to actually execute the plans and to have a hierarchy of regional, district and block schemes.

²⁵ Performance Evaluation of Statutory Development Boards (SDBs) in Maharashtra (2003)

6.7 Optimization of Regional Resource Pool

6.7.1 Clear guidelines be issued for correct estimation of non-divisible and non-plan expenditure so that maximum resources become available for the divisible plan budget to be allocated to three regions. An indicative set of principles for this purpose is suggested as follows:

1. A comprehensive exercise be undertaken for classification of all expenditure items into divisible & non-divisible and similarly plan & non-plan sections of budget. The classification should be approved by the Planning Department and any subsequent change/ amendment in the classification should be submitted to the Planning Department for approval.
2. Planning and resource allocation of CSS/ out of budget funds/ externally aided projects/ direct GoI assisted program like NRHM, etc., should also be based, up to the extent possible and within the framework of such schemes, on the committee's composite formula.
3. Expenditures of inter-regional nature should have clearly specified and quantified physical targets with details of geographic coverage.
4. In case of outlays towards inter-state agreements/ awards/ obligations the benefits accrued to the state should be made available.
5. The rationale and expected outcome for any other expenditure deemed fit as the non-divisible requirement of the state should also be made available.

6.7.2 Committee formula for distribution of divisible pool amongst regions, as recommended, should be followed for devolving the State's resources to the three regions.

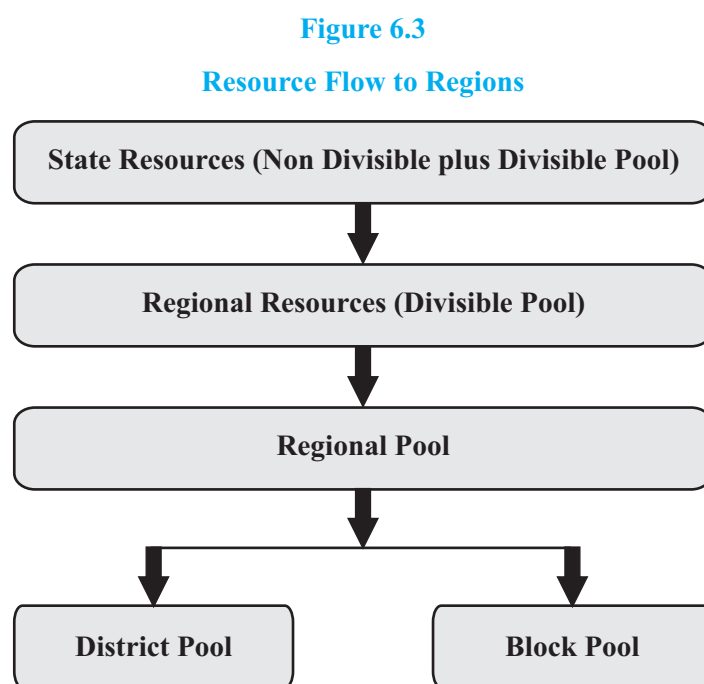
1. Out of the total plan the SCSP and TSP allocations are to be subtracted at the State level as per the population criteria, as is being done now. Thereafter the allocation for water sector as a whole is to be done at a fixed level of 30 % of the remainder, which is being recommended by this committee. After doing so the resultant amount is available for the divisible and non-divisible plans for sectors other than the water sector as explained below.
2. From this divisible pool again 30% are to be deducted for District Planning & 30% for Block Planning. Both types of these resources are again to be redistributed to the three regions as per the Committees formula. Remaining Divisible pool resources again to be devolved to the three regions as per the Committees formula.
3. Out of the total resources received by each region for the sectors other than the water sector, a minimum of 30% be devolved to districts and a minimum of 30% be given to blocks by the Regional Development Boards. Rest of the resources are to be retained by the RDBs for planning at the regional level. Formula of HDI with 50% weightage; Area with 25% weightage and population with 25% weightage be applied to apportion resources meant for districts.
4. Composite Block Development Index, prepared with State Human Development Report be used to apportion resources amongst blocks in a district.

5. There is no DPC like structure at block level. Government should constitute an Expert Group to recommend the structure of a Block Planning Committee (BPC) and the block schemes which could be implemented at the block level. As that of a Collector at the district level, the State can designate a Deputy Collector level officer as the member secretary and nodal officer to coordinate and implement the Block Level Plan.

Region wise planning and resource allocation of CSS/ out of budget funds/ externally aided projects/ direct GoI assisted program like NRHM, etc., can be based on the committee's composite formula, up to the extent possible and within the overall guidelines of Government of India.

6.7.3 Process of Resource Allocation

There should be four tier resource flow in the State as shown in Figure 6.3



6.8 Region as the Unit of Governance and Administration

6.8.1 Representation of Regions in Composition of Government

The Nagpur Agreement sub clause 6 has envisaged equal representation of regions in the composition of government. Further, the sub clause states that there has to be equal representation of regions also in the government service. Thus, it recognizes composition of government and services in the government as two different aspects. An interpretation is that there should be equal representation of regions in the structure of political governance. An analysis of the regional representation in the composition of State Cabinets since 1995 is given in Table 6.3

Table 6.3
Representation of Regions in the State Cabinet: Indicative Chart

Sr.	Tenure of State Cabinet	Number of Ministers from Three Regions since the First Cabinet			Total Number of Ministers
		Vidarbha	Marathwada	RoM	
1	2	3	4	5	6
1	21, March 1995 (09 th Vidhan Sabha)	05 (24 %)	04 (19 %)	12 (57 %)	21
2	Oct 1999 (10 th Vidhan Sabha)	10 (20 %)	08 (16 %)	33 (64 %)	51
3	Nov 2004 (11 th Vidhan Sabha)	10 (25 %)	06 (15 %)	23 (60 %)	39
4	Nov 2009 (12 th Vidhan Sabha)	07 (18 %)	07 (18 %)	24 (63 %)	38

Source: Maharashtra VidhanMandal, 2013; Note: Tabulation/compilation YASHADA.

This chart is only indicative.

The regional representation on the positions of Chief Ministers and Deputy Chief Ministers since 1995 is as follows:

Table 6.4
Representation of Regions on the Position of CM and DCM: Indicative Chart

Sr.	Position	Date & Year of Government formation	Number of CMs & DCMs from Three Regions		
			Vidarbha	Marathwada	RoM
1	2	3	4	5	6
1	Chief Minister Deputy Chief Minister	March, 1995 (09 th Vidhan Sabha)		√	√
2	Chief Minister Deputy Chief Minister	Oct, 1999 (10 th Vidhan Sabha)		√Part	√Part √
3	Chief Minister Deputy Chief Minister	Nov, 2004 (11 th Vidhan Sabha)		√	√
4	Chief Minister Deputy Chief Minister	Nov, 2009 (12 th Vidhan Sabha)		√Part	√Part √

Source: Maharashtra VidhanMandal, 2013; Note: Tabulation/compilation YASHADA

Further details of tenures of Chief Ministers from various regions and regional representation on the important ministerial portfolios since 1991 are presented at Annex 6.4 and Annex 6.5 respectively.

6.8.2 Issue of Equitable Representation

The committee had commissioned a study titled 'Reimagining Maharashtra: Moving Towards Creative Politics: Overview and Suggestions' to Dr. Palshikar, Head, Department of Politics,

University of Pune. The report titled 'Reimagining Maharashtra - Moving Towards Creative Politics: Overview and Suggestions' has dwelt at length on the issues of sharing of important cabinet portfolios among the ministers from the three regions. Relevant excerpts from the report are placed at Annex 6.6.

It can be observed that the Ministers from all three regions have occupied the cabinet berths though in varying proportions. It can be noted that many Chief Ministers have been from Marathwada. However, the Vidarbha region had very poor share of the political Power.

Recalling the Nagpur Agreement which has clearly stated that- “*The three units will be given representation in proportion to population in (a) the composition of the Government...*” - the committee fully endorses the recommendation of the report that: “It would require a spirit of compromise, a commitment to the cause of 'Maharashtra' - a rededication to the dream of Maharashtra, reimagining the idea of Maharashtra and it would also require a politics based on statesmanship rather than contingent manipulations” (Palashikar, 2012, P 71). Hence the committee recommends that important ministries be grouped and equitably distributed amongst the three regions.

6.8.3 Shifting of Legislature and Mantralaya to Nagpur During Winter Session

As required by Nagpur Agreement, one session of State Legislature is held in Nagpur and during that period the entire Mantralaya also shifts to Nagpur. This practice has been religiously followed year after year. For the sake of logistic convenience, the shifting of Mantralaya always coincides with the winter session of legislature in Nagpur (See Table 6.5.)

Details of issues related to backward regions taken up during the Nagpur session of Assembly are provided in Annex 6.7.

It was thought that holding legislative session and shifting Mantralaya operations to Nagpur for a certain period will enable greater focus on the issues of backward regions. However, there is no tangible evidence to show that this underlying objective has been fulfilled through years of following this practice. Given the nature of business in the Assembly, it is difficult to confine the deliberations only to the issues of backward regions. Similarly, during the session of Assembly the entire Mantralaya machinery remains preoccupied with the Assembly deliberations.

Table 6.5
Duration of Assembly Sessions in Nagpur for Few Years

Sr.	Year	Duration of Nagpur Session in Days
1	2	3
1	1960	10 th Nov to 16 th Dec (27 days)
2	1962 & 63	Sessions not held due to Chinese aggression
3	1968	18 th Nov to 27 th Dec (longest – 28 days)
4	1979	Session not held
5	1980	21 st Jan to 1 st Feb & 15 th Dec to 26 th Dec (held twice)
6	1985	Session not held
7	1986	6 th Jan to 24 th Jan & 24 th Nov to 12 th Dec (held twice)
8	1989	16 th Oct to 20 th Oct (shortest – 5 days)

Source: Commonwealth Parliamentary Association, Maharashtra Branch, Nagpur Session – Myth and Reality, 2012

Therefore, it is necessary to delink the Nagpur session of Assembly and the shifting of Mantralaya to Nagpur. The shifting of Mantralaya should happen every year from 1st December to 31st December for a minimum period of one month irrespective of the Assembly session. The agenda of Mantralaya operations from Nagpur should be fixed in advance through a systematic inventory of the critical issues of the backward regions that surfaced in the respective year.

6.8.4 Representation of Regions in the State Service

A concern has been raised recurrently about an imbalance in the distribution of the State's human resources across the three regions. It is a wide perception that the best human resource remains concentrated in the Rest of Maharashtra. Officers are not willing to serve in Vidarbha and Marathwada. The posting in the backward regions is often perceived not as a positive challenge but as a kind of disincentive. A broad scenario of regional representation in government employment is given in the Annex 6.8.

Taking a note of this the Government of Maharashtra in General Administration Department has framed rules for creation of divisional cadres, prescribing the tenures of posting of Class I and Class II officers for different modes of recruitment. These rules have been notified in the gazette vide notifications No. SRV.2010/CRI/10/12 dated June 2010 for direct recruitment through Public Service Commission as well as through Departmental Promotion Committee. These rules have been framed by the Government in exercise of powers conferred to it by the proviso to Article 309 of the Constitution. A broad summary of these rules is given below:

These rules cover all six divisional cadres. There are 2 sets of rules prescribed by the Government. One relating to direct recruitment and another relating to promotion quota. The rules, inter alia, have prescribed the procedure for selection of candidates through Public Service Commission in case of direct candidates and another through a Departmental Promotion Committee.

These rules prescribe the allotment procedure to the Divisional cadres after selection. The rules also state that the candidates will be asked to give the preference of the place where they want the posting. In case a vacancy is not available in the preferred cadre then the rules provide that the allotment shall be made as per the order of merit is the first available vacancy in the six divisions starting from Nagpur, Amravati, Aurangabad, Konkan, Nashik and Pune in the same order.

The rules also provide for minimum tenure of posting in the cadre. The salient points in the Notification of the General Administration Department dated 8th June 2010 are as follows:

“Section 4:

(a) For appointment to the post of Group A and Group B after recommendation from the Commission or Selection Committee or Selection Board, as the case may be, the concerned candidate shall indicate his first preference to any one of the Divisional Cadre;

(b) Once posting is given, after consideration of preference and merit number as above, the candidate appointed in Group B shall be required to complete minimum period of

*nine years; and the candidate appointed in Group A shall be required to complete minimum period of six years in the divisional cadre... ”.*²⁶

as can be seen from the figures given in Annex 6.8 (i) and (ii) it cannot be proved that the human resources are unequitably distributed across the State. Further, the State Government has taken adequate measures to see to it that the human resources are equitably distributed.

6.9 Major Recommendations

6.9.1 Restructuring of Regional Boards

As has been pointed out at different places and more specifically in Para 6.6.1 our committee recommends restructuring and functioning of the Regional Development Boards as follows:

1. Structure

a. Chief Minister	Chairman
Deputy Chief Minister	Deputy Chairman
Seniormost Cabinet Minister from the region	Executive Chairman
Cabinet Minister (Finance&Planning)	Member
Other Cabinet Ministers from the region	Members
Executive Chairman of the State Planning Board	Member
Minister of State (Finance& Planning)	Member
Other Ministers of State from the region	Members
b. Following Members nominated by Hon. Governor	
Two Members of Legislative Council from the region	Members
Two Members of Legislative Assembly from the region	Members
Two Mayors of Municipal Corporations from the region	Members
Two Presidents of Zilla Parishads from the region	Members
Two Presidents of Municipal Councils from the region	Members
Two Experts from the Region (From any field e.g. Rural Development, Urban Planning, Transportation, Connectivity, Water Resources, Agriculture, Education, Health, Drinking Water, Sanitation, Social Sectors etc.)	Members
Two eminent social personalities from the region	Members
c. Additional Chief Secretary& Regional Development Commissioner	Member Secretary

(Note: It should be ensured that each district in that region gets a representation on the Regional Development Board. Similarly, adequate representation should be given to women.)

²⁶ Notification of the General Administration Department dated 8th June 2010

2. Powers and Functions of the Regional Development Boards

Powers and functions of the Regional Development Boards to include:

- a. Preparing comprehensive Five Year Perspective Plans and Annual Plans of the region.
- b. Devolution of plan resources to the districts and blocks as per the formula suggested by this committee.
- c. Accordingly approval to plans submitted by the DPCs.
- d. Execution, supervision and monitoring of development plans in the region.
- e. Any other functions and responsibilities entrusted by Hon. Governor from time to time.
- f. Any other functions and responsibilities entrusted by the State Government from time to time.
- g. The Regional Development Board should meet at least once in three months.

3. Empowered Group of Ministers

An Empowered Group of Ministers (EGoM)-under the chairmanship of the seniormost Cabinet rank Minister from the region- with all Cabinet rank Ministers from the region as its members be formed for each region. This group can meet as and when required, to take decisions on similar lines as that of the State Cabinet, but only in pursuance of their function of implementing the plans. This is being recommended to facilitate faster decision making on the region specific problems on plan implementation. However, the State Government should issue elaborate guidelines specifying powers and modalities of functioning of such EGoM.

4. Regional Secretariat

- a. An Additional Chief Secretary rank officer designated as 'Additional Chief Secretary & Regional Development Commissioner' (ACS & RDC) to head the Regional Secretariat and be the Member Secretary of the Regional Development Board.
- b. ACS & RDC to be assisted by ministerial officers like Joint Regional Development Commissioners of the rank of Secretaries to the State Government, Joint Secretaries, Deputy Secretaries, Desk Officers, and the supporting staff.
- c. The strength of the Regional Secretariat manpower to be fixed by the State Cabinet, in consultation with the Regional Development Board, from time to time.
- d. At present the PAR of an Additional Chief Secretary in Mantralaya is reviewed by the respective Minister. It is recommended that the PAR of the ACS & RDC be reviewed by the Executive Chairman of the RDB.

- e. All officers of the rank of ACS & RDC and below upto the rank of Section/Desk Officers should be entitled to (i) retain their Government accommodation in their previous places of posting, in addition to being entitled to an appropriate accommodation at the place of the Regional Secretariat or (ii) HRA at the prevailing rate, in lieu of Government accommodation at the previous place of posting, in addition to being entitled to an appropriate accommodation at the place of the Regional Secretariat.
- f. All officers of the rank of ACS & RDC and below up to the rank of Section/Desk Officers should be entitled to all perks/allowances/cash compensations, which are applicable to officers belonging to one rank higher than them respectively in Mantralaya, as if they were posted in Mantralaya, Mumbai in one rank above their present level.

5. Location of the Regional Development Boards Offices

Following recommendations are made regarding the location of Regional Development Boards Offices & Regional Secretariats:

- a) Vidarbha Regional Development Board : Nagpur
- b) Marathwada Regional Development Board : Aurangabad
- c) Rest of Maharashtra Regional Development Board : Nashik

6. Financial Recommendations

The endeavour should be that maximum resources are allocated as divisible resources for distribution amongst the regions. The trend as seen from last 10 years indicates that the proportion of divisible pool is minimum 60%. Division of resources should be in consonance with Rule 7(5) of the Governor's rules but divisible pool should not be less than 60%. However, though approximately 40% resources are be kept at the disposal of the State, region wise allocation and expenditure of such non-divisible resources, to the extent possible, be shown in each budget.

Once these resources are placed at the disposal of the Regional Development Boards, then they should not be diverted to other regions, even if they are not spent in that financial year. This amount should be provided as a roll on money and government to evolve appropriate financial mechanism to ensure that it is used within the region.

- a. Out of the total plan the SCSP and TSP allocations are to be subtracted at the State level as per the population criteria, as is being done now. Thereafter the allocation for water sector as a whole is to be done at a fixed level of 30 % of the remainder, which is being recommended by this committee. After doing so the resultant amount is available for the divisible and non-divisible plans for

sectors other than the water sector as explained below.

- b. From this divisible pool again 30% are to be deducted for District Planning & 30% for Block Planning. Both types of these resources are again to be redistributed to the three regions as per the Committees formula. Remaining Divisible resources again to be devolved to the three regions as per the Committees formula.
- c. Out of the total resources received by each region for the sectors other than the water sector, a minimum of 30% be devolved to districts and a minimum of 30% be given to blocks by the Regional Development Boards. Rest of the resources are to be retained by the RDBs for planning at the regional level. Formula of HDI with 50% weightage; Area with 25% weightage and population with 25% weightage can be applied to apportion resources meant for districts. However, Subsequently the regions should evolve formula to apportion resources amongst districts, on the lines of the formula of the Committee to devolve resources to the three regions.
- d. Composite Block Development Index, prepared with State Human Development Report be used to apportion resources amongst blocks in a district.
- e. There is no DPC like structure at block level. Government should constitute an Expert Group to recommend the structure of a Block Planning Committee (BPC) and the block schemes which could be implemented at the block level. As that of a Collector at the district level, the State can designate a Deputy Collector level officer as the member secretary and nodal officer to coordinate and implement the Block Level Plan.
- f. While preparing plans, as recommended by the committee, various '*Floor Levels*' (Sectoral, Sub-sectoral and Geographical) as well as '*Fixed Levels*' of plan allocation must be adhered to by all departments. The regional plans, so prepared, be finally approved by the State Government.
- g. After having allocated the '*Floor Levels*' (Sectoral, Sub-sectoral) as well as '*Fixed Levels*' of resources, the respective planning authorities should be free to allocate the remaining resources for general and overall planning of the State/regions/districts or the blocks-as the case may be- as per the priorities decided by these respective planning authorities.
- h. The State should have four hierarchies of schemes namely, State Level Schemes, Regional Level Schemes, District Level Schemes and Block Level Schemes. Expert committee be set up to determine these schemes.
- i. The schemes recommended by the Boards be finalized in consultation with the respective parent departments. All technical support be provided by parent departments. The administrative and financial powers for implementing these

schemes effectively should be appropriately devolved to the regional board offices. Expert Committee be setup to devolve such powers.

- j. For block schemes –block level functionaries be empowered .
- k. The existing institution of Divisional Commissioner to continue to function at divisional or sub-regional level but with a stronger focus on facilitation of regional development under an overall guidance of the Regional Development Boards and the Regional Secretariats.

6.9.2 Establishment of Project Appraisal Board

Acceleration of growth will require additional investment by the State which is possible if there is headroom for borrowing within the FRBM Act. This will help in augmenting resources for regional growth. The committee's formula for resource sharing should cover total resources including borrowings, as far as possible. To achieve this we are proposing the establishment of a Project Appraisal Board with certain Terms of Reference.

Similar to the central scheme resources, it is imperative that the resources raised through loans even though it is part of Government budget should also be devolved to regions judiciously taking into consideration regional backwardness perspective. In fact, because there is leverage for the State for borrowing within the limits of Fiscal Responsibility and Budget Management Act (FRBM Act) 2003, the State can think of Project Specific borrowing. Such borrowing can be for specific development needs of the regions and can also be for the State as a whole. The underlying principle should be that such resources raised through borrowing are raised for particular development outcome in the context of balanced regional growth of the State. Thus rather than redistributing such borrowed resources in a sparse manner through budget to various departments, schemes and programs, specific areas can be identified so that in a focused manner resources are raised and spent. Thus, in the light of given growth strategies it is expected that the State formulates specific intervention projects and resources are raised for the projects by resorting to enhanced borrowings.

6.9.2.1 Functions of the Project Appraisal Board

Project Appraisal Board should:

1. Recommend PPP projects with total investment of more than Rs 500 crore for approval by the Competent Authority;
2. Recommend adequate Viability Gap Funding for socially-viable but important PPP Projects;
3. Provide overall prudential oversight on government borrowing for PPP projects.
4. Facilitate *Mid-Term* corrections as and when necessary in the management of projects.

The Board should help to ensure that the borrowing is made for specific projects ONLY in the context of promoting growth strategies. The Board should deal with

projects above Rs. 500 crore budget only. This Board will play an important role in appraisal and administration of such projects. It will provide a single window clearance for such projects. It will ensure prudent borrowing for the projects. The Board should have the powers to amend the PPP contractual conditions. The Project Appraisal Board will also examine the viability of projects and utilization capacity of respective regions and will forward the proposals to the Cabinet or the appropriate Competent Authority for approval. Initially, the Board should deal with limited sectors such as roads, rail, metro, airports, ports, energy, major irrigation projects and urban infrastructure. Eventually, its scope can be expanded to include the felt needs of the regions.

6.9.2.2 Composition of the Project Appraisal Board

Chief Secretary	Chairman
Additional Chief Secretary and RDC of the respective region	Member
Additional Chief/Principal Secretary/Secretary (Planning)	Member
Additional Chief/Principal Secretary/Secretary (Finance)	Member
Additional Chief/Principal Secretary/Secretary (L & J D)	Member
Additional Chief/Principal Secretary/ Secretary (of concerned department)	Member
Three Experts (One each from Banking, Management and Technical background)	Members
Joint/Deputy Secretary (Planning Department)	Member Secretary

6.9.3 Establishment of a State Statistical Board

Availability of a comprehensive, up to date and verified set of statistics is the prerequisite for proper planning and reviewing of developmental issues. During its deliberations, the committee came across a number of constraints on the availability of sound database for analyzing and drawing inferences on the issues under consideration. Also, the general perception is that the veracity of the State data is often not free from doubts.

At present the Directorate of Economics and Statistics (DES) is the nodal agency at State level to collect, maintain, analyze and publish various kinds of statistics. DES has divisional as well as district offices. Most of the data compiled by DES is provided by the field officers or is collated from the MIS of different departments. There is hardly any control of DES on system of gathering data. This raises the issue of the validity and reliability of data.

The Union Ministry of Statistics has launched the India Statistical Strengthening Project (ISSP) as a comprehensive project designed to strengthen the State statistical systems. This will provide adequate technical and financial support to improve the statistical capacity and infrastructure for collecting, compiling and disseminating reliable statistics for policy planning

purposes particularly at the State and Sub-state levels. Under this initiative significant improvement in the credibility, timeliness and reliability of the State level data is expected, particularly in respect of following key identified statistical indicators such as State Domestic Product, Capital Formation & Savings, District Domestic Product, Contribution of Local Bodies, Major Fiscal variables, Conduct of Annual Survey of Industries, Index of Industrial Production, Crop Area & Production, Wholesale Price Index numbers, Consumer Price Index numbers, Health & Health Care Utilization, Morbidity, Mortality & Family Welfare statistics, Scheduled Caste Development, Tribal Development, Education & Literacy statistics, Labor & Employment statistics, Housing statistics, Birth/Death Registration & Population, Electricity Production & Distribution statistics, Environment & Forest statistics, Transport statistics and Statistics for local area planning, etc.

In addition, ISSP is also expected to improve and catalyze the process of generating data required for planning, monitoring and reviewing various development schemes including different flagship schemes of the Government. The Collection of Statistics Act, 2008, has also been passed to strengthen the statistical systems in the country.

In this context, the committee recommends that a State Statistical Board, with a Principal Secretary level officer as its head, be established on the lines of the National Statistical Commission with broad objectives as follows:

1. To identify the core statistics critical for the development of economy;
2. To evolve standard statistical classifications and methodologies and set the minimum quality standards;
3. To evolve effective strategies for collection, tabulation and dissemination of core statistics;
4. To constitute working groups to assist the State Government on various issues;
5. To facilitate statistical co-ordination between different departments and agencies of the State Government;
6. To maintain region wise statistics of all the parameters and indicators required for monitoring of balanced regional development.
7. To coordinate with the National Statistical Commission.
8. To take up such important assignments as decided by the State Government from time to time.

6.9.4 Public Policy Platform for Balanced Regional Development

Evidence based policy formulation is key to the balanced and sustained development of any region. It has been an accepted position worldwide that such policy formulation requires inputs of rigorous research/ evaluation as well as consultation with various stakeholders. In many countries dedicated institutes have been set up to assist the State in formulating evidence based policies. Such a process of policy making typically follows systematic steps such as evaluation

of existing policies/programs, determination of the need for improvements/reforms, identification of options/ alternatives available for such reforms, systematic analysis of each option to determine its feasibility/social cost-benefit / socio-political acceptability, etc. and then piloting of selected options, consultations with stakeholders and finally suggestion of policy scenarios for final decision by the State.

Today, Maharashtra's economy is a large economy and as it becomes larger and more complex over time, designing of development policies will become very challenging, and consequently, we will need to promote more knowledge-based policies and solutions as the issues and trade-offs become multi-dimensional and inter-related. The new challenges arising from urbanization process and the climate change or environmental stress are the prime examples of such emerging complexities.

In this context, to facilitate informed debate amongst stakeholders as well as to improve policy choices, alternatives and trade-offs, research-based analysis of the issues will become very important. Presently, Maharashtra is not investing enough in promoting development research on the issues that our State's economy faces or will face. Even for carrying out our Committee's work, we had to commission a number of fresh studies by mobilizing the universities and research institutes of Maharashtra. But, this was only one-off exercise and will not be adequate to tackle future challenges. We need more systematic and a sustained institutional framework.

Therefore, we recommend a two track approach for setting up a public policy platform in the State:

1. Institute of Public Policy
2. Maharashtra Development Research Council

6.9.4.1 Institute of Public Policy

An Institute of Public Policy should be set up at the State Level to undertake systematic Policy Evaluation, Policy Analysis and Policy Education. The Institute should have three distinct wings to carry out these functions. In order to integrate the functions of evaluation, analysis and education the institute will have State Level Resource Centers for all major sectors, which will work towards continuous refinement of policies and programmes in the respective sectors. The institute should have a careful coupling of experienced government officers and independent academic experts at all levels right from the Governing Board to the faculty in the resource centers.

The institute can also have a dedicated unit for balanced regional development, which will provide policy related support to the Regional Development Boards and will also guide the activities of the Regional Institutes of Governance.

6.9.4.2 Maharashtra Development Research Council (MDRC)

The council will identify policy issues of development research areas and allocate funds to universities or research institutes in Maharashtra or outside Maharashtra to

ensure high quality research. Apart from independent quality research on relevant themes, the council will also have amongst its mandate facilitation of independent monitoring and evaluation of Government (including Central Government) schemes. For this purpose the MDRC will identify independent scholars and Research Institutions/Universities to carry out such evaluation. In a sense this will mimic an Independent Evaluation Office (IEO) which is a standard best practice which is in vogue as can be seen by the functioning of international organizations like the IMF and national organizations like the Planning Commission. Apart from helping the policy makers with inputs for mid-course correction, it will also send out a signal that will help reduce trust/credibility deficit on the part of people regarding governmental policies and actions and will help with good governance.

This council should be governed by an independent and distinguished Board of Trustees to be chaired by the Executive Chairman, Maharashtra State Planning Board. Executive Chairmen of Regional Development Boards and the Chief Secretary, Government of Maharashtra would be ex-officio Members of this Council and a distinguished Academician should be its Member-Secretary. The proposed MDRC is envisaged as a development research funding agency and the council itself should have a small permanent staff. The initial endowment fund could be Rs. 200 crore or so to finance high quality development research. Given a wide institutional base such as University of Pune, Gokhale Institute, Indian Institute of Education, SNDT Women's University, National Chemical Laboratory, Symbiosis University, YASHADA, Maharashtra Institute of Technology (MIT) etc., Pune would be an ideal place for the MDRC's Headquarter.

6.9.5 Regional Institutes of Governance

Balanced regional development is possible only by taking into consideration the potential and resources and region specific opportunities prevailing in the regions. The committee had conducted the growth strategy studies for three regions. It is expected that the Regional Development Boards would use the findings of these studies while preparing their Five Year and Annual Plans. However, evolving the region specific strategies, policies, programs & schemes and acquiring the expertise to implement them is a continuous process. The Regional Development Boards will have to evolve the strategies not only on the basis of the resource availability from the plan funds of the State but also attract the investments from the private sector and also take region specific policy initiatives to promote growth in the region. Putting the available scarce resources in the programs & schemes which would give the maximum benefit and returns to the people of the region will be the prime responsibility of the Regional Development Boards. Hence, the Regional Development Boards will require institutional support and expertise in their functioning.

Even the existing Regional Boards are entrusted with the responsibility of evaluation of schemes. This process needs to be streamlined and institutionalized. Effectiveness of the government schemes depends not only on the resources but also on the overall governance including the human resource available. Hence it is proposed that Regional Institutes of

Governance be established in every Region, which would continuously undertake research, monitoring, evaluation, piloting of innovations, policy advocacy, and capacity building of elected representatives and officials, etc. to facilitate balanced development of each region.

6.9.6 Locating Important Government Offices in the Regions

An important aspect of Nagpur Agreement is maintaining the significance of Nagpur as the capital. It was recommended by Dandekar Committee that all Directorates be shifted to Nagpur. But this has not happened. It is a good step that new Commissionerate of MGNREGA has been created at Nagpur.

Government should shift as many existing Directorates as possible from Pune to Nagpur. Any new Societies/ Directorates should henceforth be created at Nagpur or Aurangabad.

Some existing PSUs like MTDC, MSSIDC, CIDCO, MAIDC, MHADA, etc., be trifurcated and they should function like independent entities and should be given complete autonomy. The State needs to undertake a comprehensive study and take stock of all such PSUs and organizations and make autonomous organizations. The shifting of important offices be completed in a time bound manner.

6.9.7 Other Recommendations

1. Some of the schemes require reclassification as a plan scheme, so that maximum development Non-Plan expenditure, becomes the part of Plan developmental resource pool. Thus departments need to do a strict scrutiny of the items and outlay kept as non plan and these items also be scrutinized by the Planning Department with the help of suitable experts.
2. It is imperative that equitable access to external funds be provided to all regions on the basis of the resource sharing formula proposed by this committee as far as practicable and within the framework of guidelines of external funding agencies.
3. The items of Non divisible pool of State resources should be identified and fixed for each department by the Planning Department strictly as per the Rule 7 (5) of the Governor's Rules. Once these items are identified by the Planning Department, individual department may not unilaterally change the classification.
4. The entire plan fund, once apportioned to a particular region, be available for the region and further planning be the exclusive prerogative of the Regional Development Boards. There should not be any centralized departmental planning for these resources.
5. Government should set up an expert group to formulate decentralization of administrative and financial powers so as to enable the Regional Development Boards to effectively execute the plans.
6. It is recommended that key ministries be equitably distributed amongst the three regions to promote the spirit of Nagpur Agreement.

7. It is stated in the Nagpur Agreement that the Government shall officially shift to Nagpur for a definite period and at least one session of the State Legislature shall be held every year in Nagpur. Accordingly, every year Mantralaya should shift to Nagpur for a fixed period from 1st to 31st December. The agenda of Mantralaya operations from Nagpur should be fixed in advance through a systematic inventory of the critical issues of the backward regions that surfaced in the respective year.
8. State Finance Commission needs to be strengthened and its recommendations need to be implemented in all sincerity.

6.10 Recommendations Regarding the Role of Central Government

The Committee feels that while the State Government is mainly responsible for the balanced and overall development of the State, the Central Government also has a major role to play. The Committee has identified hurdles / gaps in major infrastructure developments in a few sectors such as Industry, Mining, Forest & Environment, Roads, and Textiles etc. Study of these sectors in the State reveals necessity of Government of India's intervention which would be of great help in promoting balanced regional development.

6.10.1 Industry & Mining

Maharashtra is the most industrialized State with highest share in GDP and one of the highest Per Capita Incomes in the country. Maharashtra has just declared the New Industrial Policy-2013 wherein industrial infrastructure development is to be supported by State Government with appropriate budget allocation every year. Focused and renewed efforts are being undertaken to develop MSME sector. However, the distribution of MSMEs shows that almost 80% of MSMEs are situated in Pune, Nasik and Konkan regions (including Mumbai). The MSE-CDP scheme of MSME Ministry and IIUS of DIPP, Ministry of Industry and Commerce, follows the cluster approach and provide common facilities and infrastructure to industrial clusters of MSMEs. Under these schemes, Common Facility Centers (CFCs) such as, testing laboratories, packaging facilities, training facilities, CETPs etc. are set up. This helps the MSMEs in accessing the much required facilities easily, saves cost & time and improves their productivity & quality of products. At present there are 75 clusters identified in the State and 16 clusters are approved with project cost of Rs. 441 crores.

1. However, all the clusters do not progress at the same pace. *Hence Government of India should not impose any time limit on the various stages of cluster formation, completion of soft intervention and project completion. The release of funds to one cluster under the MSE-CDP scheme should not be linked to the expenditure of funds released to other clusters.* This move will encourage and nurture various clusters that are taking shape in the industrially backward regions of Maharashtra.
2. 'Cooperative Industrial Estates' (CIEs) are set up under Maharashtra State Cooperative Act 1960 and they have played an important role in the industrialization of the State. *The benefits of the Integrated Infrastructure Development (IID) scheme of the Central Government should be extended to the proposals of CIEs as well, which at the moment is given only to State owned Industrial Estates.*

3. *The ban on setting up further industries in the District of Chandrapur should be lifted given the demand and scope for further industrialization in that region. The process of giving environmental clearances to industries in case of forest land needs to be expedited. The provision of obtaining the clearance of MoEF for built up area of 20,000 Sq.ft. and above for industries needs to be relaxed to 1 lakh sq. ft.*
4. National Investment and Manufacturing Zones (NIMZ) is another area where Government of India policies will help in the development of Vidarbha and Marathwada regions. The NIMZ at Umred- Kuhl will have a great impact on the development of this backward region. As part of the Delhi-Mumbai Industrial Corridor (DMIC) development, Mega Industrial Park at Dhule and Shendra Bidkin (Aurangabad) nodes are proposed to be developed which will again give the much required boost to industrialization of this backward region. Many more such NIMZs need to be developed in Marathwada and Vidarbha. *Central Government support should be extended by way of sharing at least 50% of the project cost, in order to make Maharashtra “A Globally Competitive Manufacturing Destination”.*

6.10.2 Mining

Royalty rates for major minerals viz. coal, iron, bauxite, etc. are fixed by Government of India according to Section 9 of Mining and Minerals Act, 1957. State receives 80% of the total royalty from coal. Royalty rates fixed for coal and lignite are 14% and 6% of the market value respectively, whereas royalty rates fixed for natural oil and natural gas are respectively 20% and 15% of the market value. *As extraction of coal has greater impact on the environmental pollution it is recommended that royalty rates for coal and lignite be similar to royalty rates of natural oil and gas respectively to counter the adverse impact on environmental pollution. It is also recommended to exclude 0 to 5 ha. of mining area for clearance from the authority as this will help the backward region of Vidarbha to attain balanced growth since most of the mining area falls in eastern Vidarbha.*

6.10.3 Forests and Environment

At present, forest clearance for government projects up to 5 ha. in Gondia and Gadchiroli districts and up to 1 ha. for all other districts is accorded from State Government whereas for government projects of 1–10 ha. forest clearance is accorded from Regional Forest Office at Bhopal. This is too small an area for development projects and it takes too long a time for clearance and thereby delays and increases the cost of the project considerably. *It is suggested to liberalize area norms and more powers be given to local authorities to achieve cost effective and faster development.* However, development activities should not include large scale tree-felling and such activities cannot be encouraged.

6.10.4 Private Forest

According to 1975 Act, ownership of the private land having forest was taken away from owners and given to Forest Department which was later restored in 1978. However, in 1990 powers to acquire the clearance of ownership of private lands with land type forest vested with

Delhi Office of Central Government. *Hence blanket ban on development of private land should be lifted and entire management should be handled by the State Government, as texture of forests in three regions is noticeably very different and that exactly is affecting development in the State.*

6.10.5 Zudpi Jungle

The term 'Zudpi Jungle' has not been defined in any Act. However, Government land, in 6 Districts of Bhandara, Chandrapur, Gadchiroli, Nagpur, Gondia and Wardha, used by the villagers for their community needs, which are generally covered by shrub (bush growth) and not by big trees, are known as 'Zudpi Jungle'. These lands are covered by the Forest (Conservation) Act 1980. Government of Maharashtra has submitted following proposals to the Government of India for consideration.

1. *92116 ha. of Zudpi Jungle, which is found to be suitable for forestry management, development and conservation should be notified as RF under Forest Act 1927. (16,310 ha of this is already notified as RF)*
2. *86,409 ha. of Zudpi Jungle land, which is not suitable for forest management, as mentioned below, should be denotified and be allowed for any purpose including non-forestry as decided by the Revenue Department.*
3. *Government of India should give permission under the FC Act to denotify this 86,409 ha. of land through a simplified consolidated proposal without insisting on the condition of compensatory afforestation.*

The said proposals are under consideration of Government of India and they need to be expedited.

6.10.6 Protected Area

One of the most difficult hurdles for all sectors of infrastructure development is forest clearance which takes a very long time and adversely affects the development of the region. Speedy clearance from Government of India is a must. Such jungles should be given faster clearance. All such clearances are held up, mostly at the Central Government level. *Delegating the powers for such clearances, based on merit, to Bhopal Office will certainly help speedy implementation of infrastructure projects, especially in Vidarbha.*

6.10.7 Environment

The debate over stringent Coastal Regulatory Zone (CRZ) norms decelerating industrial growth is relevant today in the case of Maharashtra. Implementation of CRZ will result in change of direction in development and should be regulated for industries. Coastal Authority has recommended development of coastal zone. Authority has allowed roads on stilts but not allowed reclamation ensuring security for the area. Coastal Authority has recommended coastal road on reclamation for infrastructure only with assurance for non-commercial development. In Maharashtra we have 3 DCRs in operation, DCR 1967, DCR 1991 and DCR

2012. *Need of the hour is to streamline all these DCRs for providing dynamic application of the Rules.*

For sustainability and environment clearance we appreciate the role of Government of India and expect that

1. *Decision of the Western Ghat reports be expedited.*
2. *The limit of 20,000 sq.mts. of built up area in construction and real estate projects be revised upwards at least to 1,00,000 sq.mt. of built up area*
3. *Priority to clearances of Government projects / power projects should be accorded.*

6.10.8 Roads

Some crucial road links are yet to be established that can accelerate regional development. The absence of connectivity to southern and to the eastern part of the State which is also the central part of the country and absence of east-west links that connect to National Highways are yet major hurdles in the balanced development of the State. Committee has identified such weak links listed below:

Some parts of Ratnagiri-Nagpur road were designated as MSH-3 in RDP 1981 – 2001 & as MSH-6 in RDP 2001-21. Now, the link from Ratnagiri to Solapur (369 km.) was declared as NH-166 in 2013. The link from Solapur to Tuljapur (40 km) is already declared as NH-211 and from Tuljapur to Nagpur (495 km.) has been declared as NH- 361 in 2013. These links are yet to be included in the NHDP and thus cannot be undertaken for four laning. Keeping in view the present design standards, the total cost of four laning the road from Ratnagiri to Nagpur, which is 904 km, will be around Rs. 13,500/- crore. Converting different components of these highways into National Highway will ensure balanced development of the entire region as this National Highway will cut across all the regions of Maharashtra and also connect all non-major ports of Maharashtra. The work of four laning the road also be taken on priority so as to complete this National Highway by 2017. *In fact the entire stretch from Ratnagiri to Nagpur needs to be converted to Expressway category.*

The development of coastal area with various ports along the coast is already in progress. These ports of Konkan can be connected to Mumbai-Goa National Highway i.e. NH-17 by developing small east west links, presently not designed to carry heavy port traffic. There are 20 such links requiring huge investment. The State's Port Policy requires the private developer to construct 6/8-lane cement concrete roads from port boundary to nearest National Highway. So far only three port developers have come forward for development of three ports. The remaining work of developing 17 links can be undertaken by the State Government if adequate financial support is extended by the Central Government.

6.10.9 Agriculture (Marketing)

Minimum Support Price (MSP) for agricultural commodities are decided by Government of India and is the same for the entire country.

The Public Distribution System in the State requires (and will require more, especially with the introduction of The Food Security Act) huge supplies from the major food grain producing states, which in turn means enormous Handling & Transportation cost incurred outside the state and given to the FCI in the form of food subsidy. The farmers in the state can be given higher MSP, at least to the extent of meeting the PDS requirement of the state, which will (i) directly benefit the farmers, (ii) provide incentive for increasing productivity (iii) reduce profiteering by middlemen (iv) avoid infructuous expenditure on long distance transportation and (v) provide opportunities for the local sector in the form of handling and short distance transportation.

6.10.10 Textile

Maharashtra is second largest producer of cotton with annual production of about 70 lakh bales. Only 20 per cent of the bales are processed in the state leaving a huge gap between production and processing. State Government is encouraging all cotton processing sectors viz. spinning, weaving, processing and garment production. The present capacity of 14 lakh spindles with another 9 lakh spindles under construction in 36 cooperative spinning mills will be much less than required. *Therefore, we recommend doing away with sectoral cap as demand in the spinning sector is much more. Maharashtra Government has launched a new Textile Policy during 2012-13 which aims at processing the entire produce of cotton within the State and hence it is necessary to remove the uncertainty regarding TUF for improving investment climate.* Besides, there is huge potential to create employment in textile sector which will directly improve economic conditions of people in the cotton growing areas mainly Vidarbha and Marathwada regions.

6.10.11 Aviation Sector

Leftwing extremism is affecting development and special program is being implemented in Gondia and Gadchiroli districts of the State. To counter this kind of terrorism, State is in the process of developing either airport or airstrip in such difficult areas. *Committee recommends that 50% of the cost be shared by Government of India not only for the construction of airports / airstrips but also for cost of emergency evacuation from such LWE affected areas.*

6.10.12 Conclusion

To conclude, engagement of the Government of India, in removing the regional imbalance as well as ensuring balanced development of the State in future, is implicit in the Article 371(2) of The Constitution. This will require some quality reforms at the Central level by way of amendments in some important Acts which impede the developmental processes and will also require giving some additional funds to the State upfront to meet these expenditures. One of the effective ways to do it would be to extend the 'Terms of Reference' of the successive Central Finance Commissions in such a way that their recommendations address the issue of regional imbalance adequately. We sincerely hope that the Government of India take up this recommendation of our committee at the earliest.



CHAPTER 7

Tribal Areas: Redeeming the Promise

7.0 Introduction

Maharashtra houses the largest number of tribal people in the country. As per the 2011 Census, the number of people belonging to the Scheduled Tribes (ST) who lived in Maharashtra was 1,05,10,213. This population was 9.35 per cent of the state population.

The tribal people constitute the most deprived and neglected section of the population in the State. Broadly, they live in three inaccessible hilly and remote forest regions of the State; in the Sahyadris, the Satpudas and Eastern Gondwana. As can be seen from Map at Annex 7.1, these habitats fall along the periphery of the State. The deprivation of tribal people thus starts with geographic marginalization. Secondly, the communities are scattered in 15 districts and more than 80 talukas. Though they have inhabited these contiguous tracts historically, in the recent years they have become a minority in several of these areas. Thirdly, the marginalization and exploitation of tribal people has historical links. During the colonial period, the British deprived them of their ancestral domains and forest rights. After independence, although the Constitution of India provided various safe-guards and guarantees, the tribals were victims of administrative neglect and exploitation by non-tribal people. Fourth, their culture and languages are threatened by the modern urban-industrial juggernaut. The developmental frustration and discontent among the tribal people is becoming increasingly visible lately and in certain districts, it has assumed alarming proportions. It is for all the above reasons that 'Tribal Areas' have been considered by the committee as one of the two 'virtual' regions that would come in for special treatment so as to reduce their deprivation and foster development.

A separate study group was constituted for this purpose. This chapter draws heavily from the study report that the group had prepared. In this chapter, we propose to deal with the problem of this virtual region in four important aspects. 1) We commence with the review of the present situation of tribal communities in Maharashtra in the context of Directive Principles, and fundamental rights accorded by the Indian Constitution, the *Panchsheel* principles prescribed by Pandit Jawaharlal Nehru and the policies, programs and legislations adopted by the Government of Maharashtra. 2) Against this background we assess the developmental deficit in terms of the human development indices and measure it in monetary terms, wherever possible, and make recommendations to fill up the deficit. 3) This would be followed by the discussion of the wider policy and institutional changes for removing the multidimensional developmental deprivation of the tribal communities, and finally 4) we recommend appropriate programmatic changes to put the policies into practice.

7.1 The Present Status of Tribal People in Maharashtra

Although the term STs or Adiwasis is used, tribal people are not a homogenous entity. In Maharashtra

45 communities have been denoted as STs. In terms of size as per the 2001 Census, the most significant communities are Bhils (18,18,792), Gonds (15,54,894), Mahadeo Kolis (12,27,562), Warlis (6,27,197), Koknas (5,71,916), Thakars (4,87,696), Andhs (3,72,875), Halabas (2,97,923), Katkaris (2,35,022), Malhar Kolis (2,33,617), Korkus (2,11,692), Kolams (1,73,646), Dhor Kolis (1,70,656), Pardhis (1,59,875), Pardhans (1,26,134), and Gamits (86,777). The Katkaris, Kolams, and Madia Gonds are enumerated as Primitive Tribal Groups (PTGs). (Government of Maharashtra. [2012])

The heterogeneity among the tribal people is also because they are not on the same developmental threshold. Three broad classes could be conceived among them: (1) Tribal communities residing in the interior, hilly, forest areas, (2) Tribal families living on the plains alongside non-tribal populations and (3) Educated and semi-educated tribal people. They are also differentiated on the basis of whether living in the Scheduled Areas or outside. Developmental needs and aspirations of these sections are different and these need to be considered specifically while planning for the future.

A major difficulty in determining the socio-economic situation of the tribal communities is the absence of specific and disaggregated data about their present conditions. In the absence of such data, it becomes virtually impossible to determine their deprivation in comparison with the rest of the population. Some of the available indicators, however, clearly demonstrate the developmental gap.

7.1.1 Comparison with State Population

A comparison of development indicators for the State general population and for the Scheduled Tribes can be seen at Annex 7.2. In male literacy Scheduled Tribes lag behind the general population by almost 20%. Similarly, in female literacy the Scheduled Tribes lag behind the general population by about 41%. In gross enrollment ratio also Scheduled Tribes are far behind. Out of school children in the age group 6-17 years are 34.5% in Scheduled Tribes as against 15.9% in the general population. Average annual expenditure per student in the age group 5-29 years for Scheduled Tribes is just Rs. 1297, whereas expenditure on general students is Rs. 4511 per capita. Immunization of children in ST community is 39.3% and the same figure for general population is 62.5%.

7.1.2 Per Capita Income

Separate data on the income of tribal population in the state was not available. The economic survey of the State presented in the State Assembly by the Finance Minister on March 20, 2013 clearly indicates the inequality in Per Capita Income between the State average and tribal-majority districts. If we compare the Per Capita Income of the predominantly tribal districts such as Nandurbar (Rs. 46,415) and Gadchiroli (Rs. 48,311), we find that the Per Capita Income of these districts are just 48 and 51 per cent of the State Per Capita Income (Rs. 95,339), respectively.

7.1.3 Taluka Development Index

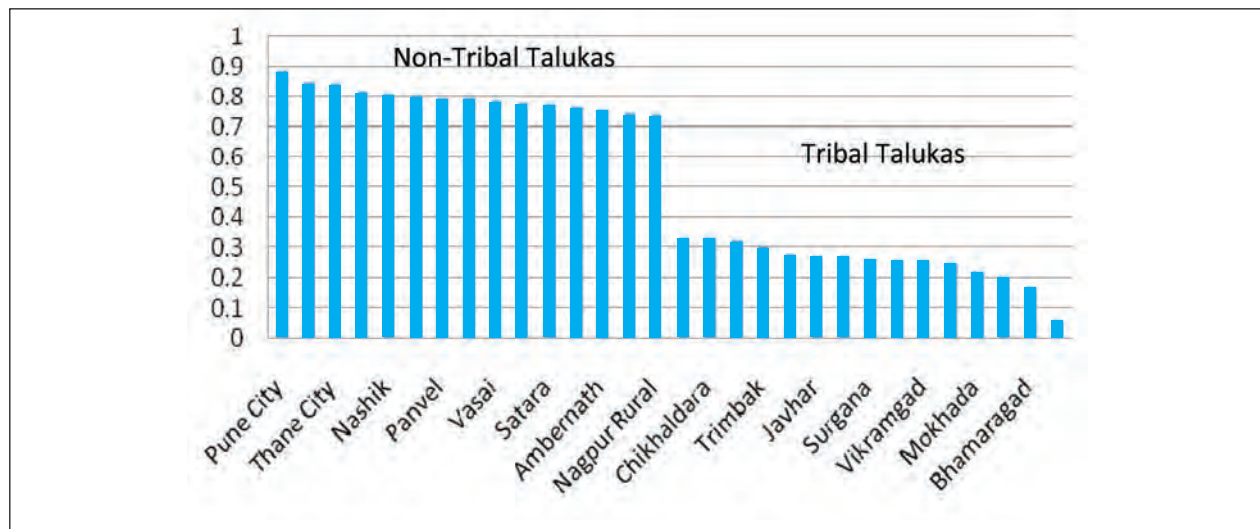
The Human Development Report of Maharashtra (2012) has computed district Human Development Indices (HDI). Nandurbar and Gadchiroli, the two tribal majority districts, rank lowest among the 35 districts of Maharashtra (YASHADA, 2012: 257 (unpublished)). The

status of tribal communities is lower than the general population on every indicator relating to health, education, infrastructure, civic amenities and utilization of government services.

The Taluka Development Index (TDI) computed by YASHADA further indicates that **among the 356 talukas in Maharashtra, the bottom fifteen are all tribal-majority talukas (Annex 7.3)**. This index (TDI) is not strictly comparable with the HDI and has also been separately computed by YASHADA. The difference between the topmost taluka (Pune 0.888) and bottom-most taluka (Akrani 0.059) is dangerously high. This is a clear picture of uneven regional development in the State. It is further highlighted by the fact that in Thane district the talukas of Thane, Kalyan, Vasai, Ulhasnagar and Ambernath belong to the top 15 whereas the adjoining five tribal talukas of Mokhada, Vikramgad, Talasari, Jawhar and Dahanu belong to the bottom 15. This is indicative of the lop-sided development in the State and the position of tribal people at the bottom of the pyramid.

Figure 7.1

Taluka Development Index



(Source : YASHADA, 2012 unpublished)

The difference between the mean TDI of the top 15 Talukas (all non-tribal) 0.797, and the bottom 15 talukas (all tribal), 0.252, is as much as 68%

7.1.4 Poverty

The poverty-line survey conducted by the District Rural Development Agencies showed that 63.7 per cent tribal households were below the poverty line in 1980 whereas the benchmark survey in 1996-97 identified 91.1 per cent tribal households below the poverty line in the sub-plan areas (GoM, 2012(a):467). Although comparative data is not available, the prevalence of poverty in the State as a whole was 43.4 per cent in 1983 and 36.9 per cent in 1993-94 (Planning Commission, 2011:267). Poverty among the tribal people was nearly double that of the State. No recent statewide data on this were available from the Tribal Development Department, Government of Maharashtra.

7.1.5 Nutrition

Estimates published by the National Nutrition Monitoring Bureau (NNMB) in 2009 reveal the following :

7.1.5.1 The malnutrition in tribal children is given in table 7.1.

Table 7.1
Malnutrition in Tribal Children

(in per cent)

Sr. No.	Children	Malnutrition	
		Below –2 SD	Below –3 SD
1	2	3	4
1	Maharashtra – General (NFHS – 3)	37	12
2	India – Tribal (NNMB)	53	20
3	Maharashtra Tribal (NNMB)	64	29
4	Difference (3 minus 1)	73	142

Child Nutrition Survey of Maharashtra (2012), a survey of total 1403 rural and 1406 urban children of 0-2 years age, presumably using methods different than those in the NNMB survey cited above, showed different numbers, but the difference between the Scheduled Tribes and the rest remained large. Prevalence of underweight children was 19.2 per cent in the non-ST, non SC population (rest) compared to 32.1 per cent in Scheduled Tribes children.

The proportion of adult men and women malnourished (BMI <18.5) was as in Table 7.2 (NNMB, 2009)

Table 7.2
Proportion of Adult Men and Women Malnourished
(in per cent)

Category	Men	Women
1	2	3
India – Tribal	40	49
Maharashtra Tribal	52.6	62.5

If nutrition is considered as an indicator of human development, then tribal people are far more 'under-developed' than the rest of the society. Worse, the tribal people in Maharashtra are more deprived than the average tribal people in the country. India Human Development Report has observed, “The condition of the tribal people in Maharashtra was worse than the country average.” (Planning Commission, 2011:71).

7.1.6 Health

1. Unfortunately the Statewide estimate of the IMR in ST areas or ST population was not available. Based on the limited data available [Hidden Child Mortality in Maharashtra,

Government of India (2006), Report of the Committee on Child Mortality, Government of Maharashtra (2004-05), and the estimates made by YASHADA (2012)] we surmise that the Infant Mortality Rate (IMR) in the tribal areas in Maharashtra is about 60-70 per cent higher than the state average.

2. The Economic Survey of Maharashtra (2012-13) states that the proportion of families with tap water supply in the house in the tribal Gadchiroli district was 19.5 per cent against the state average of 63 per cent, and the proportion of families with toilets in the house was 27 per cent compared to the state average of 53 per cent.
3. The Health Facilities Index, (which is mostly based on the physical infrastructure than on the functioning services) of the tribal talukas in the state was not much less than the state average. (YASHADA, 2012).

7.1.7 Education

1. The level of literacy and school enrollment have increased among the tribal children. The Zilla Parishad schools, and the *Ashramshalas* have certainly made education widely available even in the tribal areas, though the quality is very poor. The information provided by the Commissioner of Tribal Development (2013) claims that the total number of tribal children studying in 1108 *Ashramshalas* in the state was 447,925. The total number of tribal children/youth who received benefit of the educational schemes was claimed to be 18.6 lakh in 2012-13.
2. Literacy rates of tribal people are low compared to general population. The dropout rate of tribal children is high. In communities such as Madia Gonds, Bhils and Katkaris female literacy was as low as 23, 21 and 16 per cent, respectively (CRHP and MASS, 2007(2):8-9) while the state average was 69 per cent.

7.1.8 Primitive Tribes

1. The condition of primitive tribal groups (Katkaris, Madia Gonds and Kolams) as well as Pardhis is worse than that of other tribal communities.

The summary of various development indices is given in Table 7.3.

Table 7.3
Summary of Development Indicators on Tribal Population

Sr. No.	Indicator	State	Tribal	Per cent Difference.
1	2	3	4	5
1.	Female literacy (%)	69	41	41
2.	Children immunized (%)	62.5	39	38
3.	IMR*	48	80	67
4.	Per capita income (Rs)	95,339	48,311 (Gadchiroli)	49
5.	Malnutrition in children (-3 SD)	12	29	142
6.	TDI (Top 15 Vs bottom 15)	0.797	0.252	68

* Bang, Reddy and Deshmukh, Govt of India, (2005)

This limited data suggests that the status of tribal people on various indicators is much lower than the State averages, the deficit ranging from 37 to 142 per cent.

The scattered data does not fully capture the deprivation, the poverty and the helplessness caused by the lop-sided and uneven regional development in the State. At present, tribal people in Maharashtra are not only the poorest and most disadvantaged section but they are also the most exploited and neglected groups. The full extent of their deprivation will be better understood if one looks into the historical and contemporary causes leading to this situation.

7.2 Causes of Deprivation

7.2.1 Deprivation of Rights over Natural Resources and the Sources of Livelihood

7.2.1.1 Land Alienation and Inadequate Land Reforms

Prior to the British rule, land was broadly a common property in tribal areas and its cultivation was guided by customary laws and community edicts. Private property in land was recognized during the colonial period but a process of land alienation also began. Non-tribal traders, moneylenders and landlords took advantage of the poverty, ignorance and illiteracy of the tribal people and usurped their lands. This process continued even after the Independence. It was only in 1974 that the Maharashtra Land Revenue Code and Tenancy Laws, Amendment (Act 35 of 1974), and the Restoration of Lands to Scheduled Tribes Act (Act 14 of 1975) were passed. Later the 1975 Act was also included in the 9th Schedule of the Constitution of India to ensure that it was not challenged for violating the right to property. Though these Acts have been passed the progress on their enforcement and implementation has been extremely tardy. **The committee did not find any evidence that this problem of alienation of tribal land has changed.** As noted by the draft National Tribal Policy, 2010, "Alienation of tribal land is the single most important cause of pauperization of tribals, rendering their vulnerable economic situation more precarious."

After Independence, the process of land reforms was initiated to remove the inequality in land ownership and impart justice to the actual tillers of land. In Maharashtra, the tenancy and ceiling legislations were passed but tribal communities did not benefit significantly from them. The number of tribal beneficiaries was only 29,263 out of the nearly 20 lakh tribal families (1.5%). Again, the latest statistics has not been available. The Government of Maharashtra took a decision in 1970 to grant land titles to 5,200 'Dali' land lease holders in Raigad district (GR No. FLD/4268/27023-W). Some of the stakeholders have in their submissions to the committee pointed out tardy implementation of this decision.. The prospective beneficiaries were mostly the Katkaris belonging to the primitive tribal groups. In the absence of extensive land reforms and land redistribution programmes, tribal livelihoods remained precarious and the necessary stability for developmental processes could not be attained.

7.2.1.2 Deprivation of Forest Rights

As mentioned in the preamble of the 'Recognition of the Forest Rights Act, 2006, the forest rights of the tribal communities on their ancestral lands and their habitats were not adequately recognized in the consolidation of State forests during the colonial period as well as in independent India and hence, it resulted into the historical injustice to the forest dwelling Scheduled Tribes. Further, it is categorically mentioned in the draft National Tribal Policy, 2010 that *"Due to non-settlement of rights while declaring forests in the past, the rights of the tribals over their traditional land holdings in the forests have gradually been extinguished. Insecurity of tenure and fear of eviction from these lands has led the tribal communities to feel emotionally as well as physically alienated from forests and forest lands"*. Many of the stakeholders have aired similar grievances to us.

The 'Recognition of Forest Rights Act, 2006' is a genuine attempt to redress this injustice but its implementation in Maharashtra has been unsatisfactory. Although 1,04,702 individual claims were approved for 2,26,280 acres of land by the end of November 2012, except in Gadchiroli, community rights have not been recognized in other districts. The progress has been disturbingly slow in a tribal-majority district such as Nandurbar. The basic problem has been that the onus of proving the claim has been thrust on the unaware village communities without empowering them adequately.

Among other instances of deprivation, the provision of the 'village forest' under section 28 of the Indian Forest Act, 1927 has also not been implemented, which would have endowed the tribal communities with forest resources and helped conservation of forests and the eco-systems. The present approach of private sector purchase of non-timber forest produce such as bamboo, tendu, mahua, charoli, awala, hirda, behada, etc. has also not been adequately in the interest of the tribal people. Local empowerment and government support are needed to make the full benefits to reach the tribal people.

7.2.1.3 Inadequate Water Rights

In Maharashtra, a large number of dams have been constructed in the hilly areas which were the traditional habitats of tribal communities. These dams have not only displaced the communities but have also deprived them of irrigation benefits. The general situation today is that the tribal people live in the 'catchment' areas whereas the benefits of irrigation are reaped by the non-tribal farmers in the 'command' areas. The inadequacy of the catchment development programmes and lack of 'water lifting rights' have made tribal agriculture unviable. Even on the plains, the extent of irrigation is limited. Following a bench-mark study made under the *Adiwasi Uthan* Programme of Government of Maharashtra, only ten per cent of the surveyed tribal families had the facility of irrigation, that too mainly from wells and tanks (CRHP and MAAS, 2007:36). Secondly, following the changed priorities in water-sector,

while much of the impounded water is being made available for industrial and drinking water needs of urban conglomerates, every summer, catchment area tribal communities in the upland and hilly regions face acute scarcity of drinking water.

Traditionally, inland fisheries have been an important means of livelihood for all the tribal communities. Inland fishing not only provided the necessary 'cash' element in the livelihood but also met their nutritional requirements. However, at present these livelihoods are adversely affected. Degradation and deterioration of traditional sources, impounding of flows of water, competing economic interests of the non-tribal groups, environmental pollution and denial of user rights have been the principal factors that need to be tackled. As mentioned in the annual TSP document 2012-13, nearly 97,000 ha of water sheets in the form of tanks and reservoirs are available in the tribal areas out of the estimated total of 3,18,000 ha in Maharashtra. However, the provision for fisheries development has been extremely paltry (Rs. 129.19 lakh in 2012-13). In our interaction with stakeholders, it was put up to us that the cooperative framework governing fishing rights have been subverted by non-tribal traders and contractors. The rights over water resources are not vested with the tribal *Gram Sabhas* and hence, effective control and management is not exercised; leading to usurpation of benefits by non-tribal agencies.

7.2.1.4 Development Induced Displacement

Tribal areas being rich in hydro, forest and mineral resources have been continuously subjected to many economic groups which are bound to compete and aspire to use the resources in the region. This process which was started during the colonial period was accentuated after Independence and has continued unabated. As mentioned by the draft National Tribal Policy 2010, displacement is a multidimensional trauma and it results into tribal peoples' habitats and homelands getting fragmented, their cultures disrupted, community life shattered and they turning into migrant labourers, head-loaders and squatters in urban agglomerations. Such process of migration would be operative in rapidly urbanizing and industrializing tribal districts of Maharashtra as well. Unfortunately, in this case too credible data is not readily available. The Government of Maharashtra issued a special resolution on November 26, 1996 for development of tourist resorts/holiday homes/township in hill station type areas and let the Revenue department grant permission to the owner/developer for purchasing tribal lands in the project area. Subsequently a variety of township and infrastructure projects have emerged along the Western Ghats giving rise to complaints of alienation of **tribal lands**. The latest infrastructure development project, Delhi-Mumbai Industrial Corridor although a welcome development activity also threatens to displace a large number of tribal communities as it passes through the tribal areas of Raigad, Thane, Pune, Nashik, Dhule and Nandurbar districts. Central as well as the State Government will have to address this with all sincerity.

7.2.1.5 Lack of Employment

Tribal people as part of the massive Indian rural workforce are constantly in search of gainful employment. Much of the misery and deprivation (including bondage and indebtedness) is caused because adequate and remunerative employment is not available round the year at the place of residence. The MGNREGA holds promise but its implementation has to be improved significantly to the desired level. For example, in Maharashtra, 8,32,641 tribal families having job-cards received employment of only 1,33,88,059 labour-days in 2011-12 (average 16 days per family). In the absence of adequate employment, seasonal migration of **tribal families continues**, which has added another factor of deprivation. As it is known, seasonal migration not only increases the existential vulnerabilities of poor families but also denies them the developmental opportunities.

7.2.2 Culture, Education, Health Care, Alcohol Policy

7.2.2.1 Cultural Deprivation

Although tribal culture is admired for its colorfulness and vitality, in actual practice, it is threatened by the advancing modernity. The worst victims are tribal languages. Majority of the tribal languages are facing extinction. This is because systematic efforts for their conservation and development are not being made. Textbooks are not prepared in major tribal languages. The State organizes folk-dance competitions and artifact exhibitions but there are no systematic efforts to develop various cultural elements such as poetry, music, literature and theatre. Tribal worldviews of interacting with nature or on gender-relations are not sufficiently appreciated. Young tribal generations, therefore, look down upon their own traditions and try to emulate the dominant culture. The younger generation of tribal population will face the tensions and adequate pressures of transition from traditional to new identity at various social levels.

7.2.2.2 Educational Deprivation

Although the number of tribal children enrolling into schools is increasing, the present educational system is not geared to cater to the needs of tribal pupils, and hence it is not delivering expected results. From the U.N. Dhebar Commission (1961) to the draft national policy on tribal development, Government of India (2012) all point out that tribal children find it difficult to adjust with this system due to language barriers, alien curricula, apathetic teaching and lack of joyful educational aids. The inadequacies in operation and access to pre-primary schools in tribal areas is a major hindrance in initiating educational process. In tribal minority areas, tribal students also have to face social ridicule. Parental migration is emerging as a major cause of educational deprivation. Labour shortage in rural areas is also luring and forcing tribal children to become unskilled child-laborers. On the other hand, those who complete schooling also remain unskilled, and hence subsequently unemployed.

Ashramshalas (Ashram schools) were conventionally considered as the best option to educate tribal children but as shown by various evaluative studies, at present they are losing their efficacy and efficiency. While considerable budget outlay is spent by the Tribal Development Department on education, its distribution and outreach is unjust and uneven. For example, only Rs. 4,970 are spent per student per year in aided *ashramshalas* and Rs. 8,469 on government-run *ashramshalas*. This limit certainly needs to be increased.

7.2.2.3 Inappropriate and Inaccessible Health Care

While an attempt is being made by the Government to extend health facilities to remote tribal areas by constructing Primary Health centres and sub-centres, as evident from the absence of backlog in physical infrastructure, the health status of tribal people (nutrition, child mortality, infections like malaria) and access to health care are much worse than the State average. The major reason is that the present health care system is not designed to suit the specific social and geographic context and the needs of tribal people. Critical health issues are not addressed; standard and generalized patterns of health care are applied, tribal-specific ailments and diseases are not prioritized and the insufficiency of health personnel is not rectified. Absenteeism or vacancy of posts, lack of skilled health personnel, poor motivation and administration compounded by the traditional belief systems among the tribal people result in very low health care utilization. Hence access to health care remains extremely inadequate. This has been brought out by repeated episodes of malnutrition and child deaths in Melghat, Nandurbar and Thane and in the several public interest litigations as well as the *suo moto* cases in the High Court. Hence ***what tribal areas need is actually well-functioning and accessible health care appropriate to the needs and the features of tribal areas.***

7.2.2.4 Non-implementation of Liquor Policy

It is widely accepted that liquor ruins tribal people. The Government of Maharashtra adopted the guidelines issued by the Central Government in 1976 and enacted the New Excise Policy for tribal areas in 1977. Following this policy, sale of liquor was prohibited in Scheduled Areas and no shops were allowed. However, this policy was circumvented in 1980 and liquor shops were permitted in towns and taluka headquarters in the tribal areas. As a result, tribal areas now have enough supply of country-made and IMFL. This has further added to the poverty and misery of the people, especially that of women and children. In the tribal majority Nandurbar district, nearly 40 lakh litres of liquor was officially sold in 2010-11, the approximate market price of which would be Rs 80 Crore to 100 Crore. In Navapur taluka, a Scheduled Area, of the Nandurbar district alone more than 2,70,000 litres of liquor was sold in November 2012 (Information provided to the committee by the Excise Department, Nandurbar). It thus makes a mockery of tribal health.

This is also true of tobacco consumption. Although gutkha is banned in the State,

consumption of tobacco is rampant. The annual consumption of tobacco in Gadchiroli district was estimated by SEARCH to be Rs 73 crore in 2009 (SEARCH, 2013).

7.2.3 Politics, Governance, Administration

7.2.3.1 Ineffectiveness of Tribal Advisory Council (TAC):

Following the provisions of the Fifth Schedule of the Constitution, a Tribal Advisory Council (TAC) has been organized in Maharashtra as well. Like PESA, the TAC also holds a great promise as it is the Constitutional Authority to oversee the administration and governance in Scheduled Areas. However, its potential is also not harnessed as per the Constitutional aspirations. We were told by the members of the TAC that its meetings are not held sufficiently, frequently and the transacted business is completely unsatisfactory. We need to ensure that this sense of trust deficit does not perpetuate itself and that we enhance the process of confidence building.

7.2.3.2 Political Frustration

Although a definite number of tribal representatives are elected to the Legislative Assembly, they appear to be ineffective as a pressure-group championing the interests of tribal people. 'Party politics' seems inadequate in fulfilling democratic aspirations of the tribal population. Tribal MLAs opined to this study group that in the present political scenario, their voice and articulation of their interests remain weak. The representative system of democracy is not being complemented by direct, participatory processes of governance and hence, political frustrations appear to be mounting at various levels.

7.2.3.3 Administrative Fragmentation of Tribal Areas

Following the Presidential Order of 1985, the Scheduled Areas and TSP areas were supposedly made co-terminus in Maharashtra. However, considerable anomalies still exist. About 49 per cent of the tribal population lives within the Scheduled Areas whereas remaining 51 per cent lives outside. Some of them are covered by what is termed as 'Outside Tribal Sub Plan (OTSP)' programmes, but they do not enjoy the Constitutional safeguards meant for Scheduled Areas. Even within the Scheduled Areas which are distributed in 80 talukas in 15 districts the tribal communities are a majority only in 22 talukas. In the rest, they are in minority constituting 20 to 50 per cent of the population and hence, they are easily outnumbered in decision making processes. The budget outlay meant for tribal people also gets diluted, especially in case of infrastructure programmes. In several places, an Integrated Tribal Development Project (ITDP) area is spread over different talukas but not covering the entire district. The administration therein is divided between Revenue, Rural Development, Forest and the Tribal Development Departments. However, except for the TDD, the officers from other departments such as the Collector, CEO Zilla

Parishad, BDO, Tahsildar, have to look after programmes in the Scheduled Areas as well as the Non-Scheduled Areas. Hence the governance in the districts is not tribal-centric.

7.2.3.4 Governance Issues: PESA

The Scheduled Areas in Maharashtra are governed by the directives of the Fifth Schedule of the Constitution. In 1996, the Panchayats (Extension to Scheduled Areas) Act (PESA) was enacted to facilitate the system of local self-governance. The PESA has been progressive and radical legislation and holds the potential to impart justice to tribal communities. However, in Maharashtra spirit of Central directives on PESA is yet to be adequately materialized to attain implicit transformative potential. One of the major difficulties in Maharashtra PESA has been the inappropriate definition of a village and the village assembly (*Gramsabha*). Instead of making the *Gramsabha* of an individual hamlet (*wadi, pada, tola, pod, mohalla* or village) as the seat of decision making, the *Gramsabha* of a *Grampanchayat* (as per the Maharashtra Gram-Panchayat Act, 1958) has been authorized. As it is known, the *Grampanchayats* encompass several villages and hamlets and hence cannot become the true locale of self-governance. Secondly, tribal communities are not well-informed about the radical provisions of PESA and a process of empowerment was not initiated. The expected gains from PESA in terms of decentralization and participatory democracy are emerging in a very slow manner.

7.2.3.5 Limitations of Tribal Sub-Plan and the Development Programmes

The basic objective behind the initiation of Tribal Sub Plan (TSP) was to elevate the living standard of the tribal people and bridge the developmental gap between them and rest of the society. The TSP was started in Maharashtra in 1975-76. The major watershed in the functioning of the TSP was the acceptance of the recommendations of the Sukhthankar Committee in 1992. Following these recommendations, the practice of setting aside 8.9 per cent of State Plan outlay for TSP was accepted and the planning of TSP was entrusted to the Tribal Development Department (TDD). However, in several financial years either less than 9% of the State budget was allocated or a part of that got lapsed as 'unspent'. In this way, since 1994 onwards, the tribal people of Maharashtra have been deprived of Rs. 7,607 Crore of their legitimate share in the budget (Annex 7.4).

Moreover, the TSP budget provision is, in principle, an additional provision to bring tribal people to the level of the rest of the population. Hence other services or expenses which should be uniformly spread over the entire state should not be spent from the TSP. The TSP budget is often used as substitution and not as additionality to the general budget.

The other recommendations of the Sukhthankar Committee, particularly the one suggesting planning of TSP from below, that is, from the village level, was not implemented. A critical review of the TSP by this study group reveals that, although

the Tribal Development Department has started planning and allocating the funds to various departments, it still remains quite centralized, standardized and reverting to 'top to bottom' approach. There are various schemes that are in operation simultaneously. It would be useful to have a critical evaluation and review of the present modality of their operations. Problems such as ill-defined or conflicting priorities, poor and faulty targeting, inappropriate design of the schemes, or pilferages should be assessed with an objective of innovative improvements. The TDD which allocates the resources should also have systems to monitor the progress and assess the impact. In the absence of such a review, and monitoring process, to ensure the accountability of the line departments, of the 24 Integrated Tribal Development Projects, 11 are considered sensitive. The Government has decided to appoint IAS officers there. However, this is yet to be achieved in practice. The dearth of competent personnel with TDD affects its efficiency. Secondly, although it is expected to create a separate planning and monitoring arrangement in the District Planning committee for the tribal plan (as per the GR No. TSP-1099/No.27/6 of 19th June 1999), it awaits to be enacted. Thirdly, the Project Level Implementation Committees (as per the GR of (No. TSP-1992/13-1/6 dated 11th February 1993) are yet to be activated. As a result, the capacity of TDD to effectively implement and monitor programmes remains weak.

In sum, the current deprivation of tribal people is a compounded result of many factors and processes: disenfranchisement during colonial rule, social and political neglect after Independence, cultural subjugation, exploitation at the hands of non-tribals alienation from land, forest and water resources etc. Today the tribal people face, what is called 'loss of nerve' phenomenon. In the context of a balanced development, this is basically a sad story of broken promises.

Following recommendations are offered to reverse this situation, bridge the developmental gap and facilitate growth and all round development.

Box 7.1

Pandit Jawaharlal Nehru's Panchsheel for Tribal Development

1. People should develop along the lines of their own genius and we should avoid imposing anything upon them. We should try to encourage in every way their own traditional arts and culture.
 2. Tribal rights in land and forest should be protected.
 3. We should try to train and build up a team of their own people to do the work of administration and development. Some technical personnel from outside will no doubt be needed especially in the beginning. But we should avoid introducing too many outsiders into tribal territory.
 4. We should not over administer these areas or overwhelm them with a multiplicity of schemes. We should rather work through, and not in rivalry to their own social and cultural institutions.
 5. We should judge results not by statistics or the amount of money spent but by the quality of human character that is evolved.
- (Guha, 2001: 268)

7.3 Recommendations

Vision: Recognizing that tribal people are the architects of their own development the goal of our State policies should be to empower and provide them with requisite resources. This needs to happen following the Panchsheel principles, the framework laid down by the Indian Constitution and the laws and legislations enacted by the Central and State Governments. Our objectives and recommendations are guided by this vision.

Objectives: To achieve following by the year 2027

- 1) The Human Development Index of tribal people should become equal to the State average.
- 2) The Per Capita Income of the tribal people should become equal to or at least 80 per cent of the highest regional Per Capita Income.

Targets

1. Districts and talukas to be re-delineated so as to have nearly total eight districts and 100 talukas where tribal population is in absolute majority.
2. Devolution of power to and the capacity development of tribal communities to manage their own development so that 50 per cent of the Tribal Sub-Plan budget is controlled and managed by the *gramsabhas*.
3. Complete implementation of the land reforms for tribal people, PESA and Forest Rights Acts so as to have no tribal family or village deprived of these three rights.
4. Vocational/professional education and financial and management support to two million tribal youth to make them capable of self employment.

7.3.1 Governance and Institutional Reforms

7.3.1.1 The Tribes Advisory Council (TAC) of Maharashtra

The TAC should be empowered, made active and responsible for the tribal affairs in the State through the following measures

1. The scope and responsibilities of the TAC should be widened by making it a 'Tribes Advisory and Development Council'.
2. The entire tribal development plan of the State and its outlay should be approved by the TAC before it is placed before State Legislature and should be monitored by the TAC.
3. A tribal member of the legislative assembly should normally be made the Minister for Tribal Development.
4. In view of its serious responsibility (one crore people and Rs. 4000 crore outlay), the TAC should meet at least six times a year for a complete one day meeting each time, under the chairpersonship of the Chief Minister.

5. The Tribal Development Department should be accountable to the TAC. It should present its annual plan, budget and performance report to the TAC, and take approval for the next year.
6. Special study groups be appointed and expert advice be made available to enrich the functioning of the TAC.
7. The agenda of the meetings should be prepared after due consultation with the members of TAC, officers and the experts.
8. Hon. Governor may oversee the functioning of the TAC as part of the Constitutional responsibility.
9. Annual performance report of the TAC be presented to the State Assembly.

7.3.1.2 The PESA [Panchayat (Extension to Scheduled Areas) Act] of Maharashtra It should be immediately modified as per Central directives. For this purpose, the draft developed by the National Advisory Council may be accepted as the guiding framework. The *Gramsabha* of the primary habitat (hamlet, village, *wadi*, *tola*, *pada*, *pod*, *mohalla*, *tanda*, etc) should be made the focal point for all decision making at the village level. Implementation of PESA may be entrusted to the Tribal Development Department. Comprehensive training of *Gramsabhas* should be undertaken to enable them to exercise their rights and responsibilities under the PESA. Non-governmental and social organizations should be involved in the implementation of PESA.

7.3.2 TSP Fund Allocation

The purpose of TSP is to bridge the critical development gap of tribal people and, specific strategy and programmes need to be identified to bridge this gap from TSP funds. TSP cannot be reduced to a mere accounting exercise, whereby departments simply book a proportion of their expenditure (8.9%) under the TSP Head. TSP funds cannot be allocated as a mere arithmetic proportion of the outlay in each sector. There has to be special and specific planning to TSP and attempts need to be made to develop new schemes and programmes to address the development needs of STs. Further proportionate funding for general sector schemes such as irrigation, power, health, and education should not be done from TSP funds. Thus in spirit, TSP funds should be provided with 'additionality principle', to evolve tribal specific schemes over and above regular general schemes.

7.3.2.1 The present provision of 8.9 per cent of annual budget to the TSP should be revised according to the new findings of the Census 2011, and be made 9.35 per cent of the state budget.

The 9.35 per cent of the TSP budget should be allocated for tribal development as a principle of additionality (that is, over and above the regular funds for the developmental programmes and non-plan budget to the TSP area as to other non-TSP areas.)

7.3.2.2 The Government of Maharashtra should, by an Act of legislature or by Governor's order make it mandatory that the TSP funds should not lapse or be diverted for other purposes. (The Andhra Pradesh Assembly has recently passed such an Act.)

7.3.2.3 In order to fulfill the needs correctly and cater to the neediest and deserving persons, the present system of allocation of budgets should be altered. In line with the spirit of PESA at least half of the funds of the TSP should be earmarked for the *Gramsabhas* which should be allowed to determine the priorities and programmes. The demarcation and allocation of funds of TSP should be in the following manner:

Table 7.4
Proposed Budget Allocation Principle

Sr. No.	Level	Percentage of TSP budget
1	2	3
1	<i>Gramsabha</i>	50
2	<i>Gram Panchayat</i>	20
3	Panchayat Samiti	15
4	District level	10
5	State Level	5
Total		100

7.3.2.4 The ITDP project officers should establish direct rapport with the tribal *Gramsabhas* and facilitate the above arrangement. We recognize that for such a shift to happen successfully a major capacity building programme will need to be launched by our State.

7.3.2.5 **The District Tribal Sub Plan Committees** (as per GR TSP/1099/27/6 of 19th June 1999) should be activated and it should be mandatory for them to meet separately and engage into planning and monitoring of TSP in the respective districts.

7.3.2.6 **The Project Level Implementation Committee** (as per the GR No. TSP/1992/13-1/6 of 11th February 1993) should also be activated as this appears to be the most appropriate means of reviewing and monitoring the ITDP activities.

7.3.2.7 **The 'Scheduled Tribes Welfare Committee' of the legislature** should be reinstituted and accorded the status of 'Standing Committee' and its report tabled and discussed in depth in the legislature every year.

7.3.2.8 A large scale **capacity development programe** should be undertaken to enable tribal *Gramsabhas*, representatives and leaders to manage the development programmes and funds.

7.4 Administrative Reforms

7.4.1 Create Tribal Majority Districts and Talukas : To rectify the current problem of fragmentation of Scheduled Areas into several tribal minority districts and talukas, the administrative boundaries in the Scheduled Areas should be redefined to create smaller, contiguous and tribal majority talukas and districts. (To improve governance in the LWE affected tribal areas in Chhattisgarh, the single Bastar district has been recently divided into seven districts with a population of about two lakh each.) A total of eight tribal districts and 100 tribal talukas could thus be created for the nearly 75 lakh total population living in the Scheduled Areas (50 lakh tribal people along with the non-tribal population). The four criteria should be (1) Tribal people should be a majority in each taluka and district. (2) The total population of the district and taluka should be less than ten lakh and 80 thousand, respectively. (3) The distance of any village from the district headquarter should not exceed 100 km, and 25 km from the taluka head quarter. (4) The administrative units should, to the most extent, correspond to the Scheduled Areas.

Creation of such tribal majority districts and talukas will allow effective implementation of PESA in the entire taluka and district making tribal development and governance the central focus of administration. The ITDPs be re-delineated to suitably match these new administrative units.

7.4.2 The Tribal Development Department should be restructured and strengthened for meeting these challenging tasks. This may be accomplished by direct, lateral entry of personnel. The department needs to be oriented to become a champion of tribal cause. It should function in an efficient, transparent and accountable manner under the TAC.

7.4.3 The Additional Tribal Commissioners (ATCs) should be IAS officers senior to the district Collectors/CEOs. The collectors and the CEOs of the districts with Scheduled Areas should report to the ATCs. This will enable the Tribal Development Department to effectively oversee the governance and seek accountability for the tribal development programmes and the funds.

7.4.4 The Tribal Research and Training Institute may be developed along the lines of YASHADA and it should be transformed into a premier research and training institution by appointing appropriate human resource. In addition to upgrading the State TRTI in Pune, four regional research and training centres (preferably in the disadvantaged tribal districts) be re-established to train tribal leaders/representatives and monitor/evaluate the tribal development programmes. The TRTI may be mandated to compile accurate and up-to-date information on the conditions of tribal people and programme implementation. It may be made mandatory to publish this information annually. We also recommend establishing interdisciplinary Centres in State universities of Western Maharashtra and Vidarbha for studying tribal issues.

7.4.5 A system of measuring **Tribal Development Index** may be set up on the lines of the Human Development Index and published annually.

7.4.6 Lack of **valid real time information** on the status of the tribal people and on the functioning of various developmental programmes is a major handicap in monitoring and decision making. This will be one of the responsibilities of the independent Statistical Commission to be set up for Maharashtra. The Tribal Development Department or an independent state wide agency be entrusted the responsibility of information collection, monitoring and programme auditing reaching out to each tribal block and each village. Up to 0.25 per cent of the annual TSP budget be spent on this function.

7.5 Rights and Endowments

7.5.1 Land Reforms: The Government should urgently implement all land reforms and land distribution programmes meant for tribal people by appointing a special commission and fulfill the promises within the next two years. The advisories issued by the Central Government in March, 2013 should be adhered to. The ultimate objective of this commission should be to remove all anomalies in land records and complete the process of land titling to all the prospective tribal beneficiaries before March 31, 2015.

7.5.2 Land alienation of tribal people should not be allowed and entertained for any reason and under any pretext or programmes. The alienated tribal lands should be restored through a crash and time-bound programme.

7.5.3 The Forest Rights Act, 2006 should be implemented on a war-footing and in a time-bound manner by honoring the letter and spirit of the Act. Following administrative measures should be taken urgently:

1. Section 3.1 and Section 5 of the FRA, 2006 should be implemented on priority so that no *Gramsabha* (Forest Rights Committee) is deprived of the community ownership rights.
2. The State Level Steering Committee should issue clear and precise instructions regarding speedy implementation of the Act. A district monitoring committee should be constituted by including tribal MLAs and non-governmental representatives.
3. As declared by the Ministry of Tribal Development, Government of India, a support price mechanism should be instituted so as to prevent exploitation of tribal communities while selling non-timber forest produce in the market.
4. The procedures for granting 'transit permit' (TP) and other processes should be streamlined.
5. A comprehensive training and capacity building programme for empowering the *Gramsabhas* in managing the community forests should be undertaken by the TDD.
6. The Primitive Tribal Groups are endowed with 'habitat rights' under the FRA, 2006. TDD should take immediate steps to file their claims under this provision.

7.5.4 It should be the goal of the Government to remove the **developmental deficit** and bring the tribal people to an equitable level of development; features of which would be self determined by them as per the Panchsheel Policy and the PESA. Tribal people have lagged behind in

development because of a long history of handicaps and injustices and the inexcusable delay in implementing various land and forest related legislations since 1960 including non-grant of water and fisheries rights. The loss and deprivation so caused should be compensated by way of a comprehensive development programme to be organized with people's participation and with a budgetary provision. This additional provision should be aimed to bring the income and the HDI of the tribal people equal to the State average. This should include

1. Watershed development to the extent of 100 per cent and irrigation facilities for at least two crops to at least 50 per cent of the cultivable land belonging to tribal people.
2. Vocational/professional education and self-employment to two million tribal youth.
3. Funds for the development of forests on which the tribal *Gramsabhas* are given the community rights.

7.5.5 Forest Development as an Income Generation Strategy for Tribal People

The forests are typically viewed as a low income sector managed passively on low intensity by the Forest Department. With the new Forest Rights Act (2006) many tribal villages have been and will be given the community forest rights. These forests should be actively developed and nurtured so that the yield is maximized. There are several types of plants or products which can be nurtured, such as bamboo, tendu, mahua, char, lakh, herbal medicines, honey, firewood and timber. Since there is plenty of water in many such areas it can be used to explore an irrigated forestry. The TSP funds can be allocated to fund such forest development under the community rights.

7.6 Development Deficit and the Necessary Programmes

- 7.6.1 Considering the favourable natural endowment in the tribal region, the broader aim should be to provide irrigation for at least two crops. The choice of the method of water storage and irrigation should be such that it can be controlled and managed by community and does not lead to displacement. In case of the ones built earlier, 10 per cent of the impounded water should be reserved for tribal families staying upstream. Similarly, the rights for drawdown land cultivation in the catchment areas should be granted to tribal families.
- 7.6.2 A comprehensive programme of catchment area development as well as **watershed area development** should be implemented in tribal areas (with emphasis on soil and water conservation and afforestation) through MGNREGA and integrating other programmes such as DPAP. *Gramsabhas* should be encouraged to make local level planning and should be involved in programme implementation.
- 7.6.3 Considering the fact that inland fisheries are both the means of sustenance as well as a source of development, a target of developing all the 97,000 ha fisheries potential in the TSP areas should be set for the next ten years; and a definite, time-bound fisheries development programme should be charted out. The innovative, pilot projects demonstrated by various non-government organizations should be noted for this purpose. Detailed plans and estimates should be made in collaboration with the Department of Fisheries and the present provision in the TSP should be appropriately increased.

- 7.6.4** A special programme focusing on vocational training, provision of seed-money and working capital as well as arranging marketing linkages should be developed for educated unemployed tribal youth. **A target of providing self-employment to 2,00,000 tribal youth annually may be set up for the next ten years.** Plans and estimates should be worked out in collaboration with the National Skilling Mission and this resource should be provided in addition to the existing TSP.
- 7.6.5** A budget for development of a forest over which rights have been or will be granted to tribal communities, should be provided, over and above the 9.35 per cent for TSP.
- 7.6.6** Provision of water for drinking and domestic use (140 litres per capita per day) throughout the year to all tribal villages be ensured, as for the rest of the State.
- 7.6.7** Village level development and employment generation projects under **MEGS/MGNREGA** should be undertaken in all the *Gramsabhas* and sustained employment should be provided with a view to reduce distressed seasonal migration from tribal areas. MGNREGA should be implemented to the maximum extent in the tribal areas. An annual target of minimum 200 days employment to at least one million tribal families, that is, two million adults in the TSP areas should be kept for the next ten years.
- 7.6.8** '**Green Bonus**' should be sanctioned to Scheduled Areas which conserve forest resources. The 13th Finance Commission has provided a formula for the Green Bonus to the States in the North East. Using the same formula, we estimate that the Scheduled Areas in the State be awarded around Rs. 300 crore over five years. This should be non-conditional and without harming the endowments and entitlements earned through the FRA, 2006.
- 7.6.9** All the above 'development deficit' funds be allocated to various levels as specified earlier for the TSP funds.
- 7.6.10** Non-government organizations be encouraged as champions of tribal cause and development.

7.7 Education

- 7.7.1** The basic aim of the educational system in tribal areas should be to transfer the cultural heritage and impart contextually relevant and quality education including the skills to earn the livelihood to all tribal children. Specifically, the following measures should be undertaken -
1. **Pre-primary schools** should be started along with the *anganwadis* so as to create educational atmosphere at tribal hamlets.
 2. Primary education should be imparted in the **mother-tongue** of the child. Following the recommendations of the Dhebar Commission (1961) and the Draft National Tribal Policy, other languages may be introduced from Std. III or IV onwards.
 3. A variety of recommendations have been received from the various study groups and committees appointed to evaluate education in tribal areas (primary schools, *ashramshalas* and hostels). These should be comprehensively reviewed and implemented in the next two years.

4. Inequity in supporting various types of educational institutions should be removed and uniform, quality assistance should be provided by the TDD.
5. Tribal *Gramsabhas* should be given the responsibility of monitoring the educational establishments in their jurisdiction. Ultimately, they should be entrusted with the responsibility of running the local educational system.
6. Following the provisions of the Sarva Shiksha Abhiyan, special seasonal hostels or other arrangements should be made for children of seasonal migrants.
7. **Vocational training** programmes for the tribal youth should focus on the newly emerging opportunities in agriculture, fisheries, agro-industries, forestry, horticulture, bio-diversity, water and energy management and local industry.
8. The curricula, textbooks and the teachers should favourably educate tribal children about the richness and strengths of **tribal culture**.
9. **Two tribal universities** be created (Gondwana University in Gadchiroli, and a new one in the Thane-Nashik region) dedicated to the goals of (1) Developing educational models and methods for tribal children and youth, (2) Providing appropriate education and livelihood skills to tribal youth and (3) Research on tribal culture, life, development and solutions.
10. The newly created Gondwana University in Gadchiroli needs to be developed into a local niche university, in the Eastern Vidarbha devoted solely to (i) Tribal development, (ii) Tribal education, (iii) Tribal culture, (iv) Forest, (v) Forest products based business development and (vi) Tribal governance. A special plan for this university be developed by assigning the task to a specialized competent agency. This university should become not a usual university granting common degrees but should become the developmental engine for tribal areas in the Gondwana region.
11. **Non-tribal children in the state also should be properly oriented about tribal ethos, life-style, culture and history.** Appropriate lessons/texts should be added in the curricula. The TDD should take initiative in this regard and collaborate with the State Textbook Bureau accordingly. Media should be encouraged to provide similar information to the non-tribal adult citizens of the state.

7.8 Health

Because the environment, culture, lifestyle and health care needs of tribal people are very different than the general population, a separate **Tribal Health Plan**, and the tribal health care programme be designed. Its main features should include:

1. Focus on making the tribal people capable and self-sufficient for their health care. A massive campaign to spread health literacy may be initiated (including in the schools).
2. Sanitation, water supply and toilets must be provided in tribal villages.
3. Health conditions and health care in the *Ashramshalas* must be immediately rectified.
4. To improve maternal, newborn and child health and nutrition in tribal areas, the recommendations

- of the Child Mortality Evaluation Committee (Government. of Maharashtra. 2005) should be urgently implemented.
5. The per child budget for nutrition in the ICDS in TSP areas should be increased.
 6. Every tribal village/*pada/tola* should have a specially trained ASHA and an *anganwadi* worker, with medicines and proper training and supervision.
 7. The distance of health centres from villages is a problem and hence medical care be made accessible through a weekly visit to each tribal village by a mobile medical service run by each PHC.
 8. All health care institutions in the tribal areas must meet the Indian Public Health Standards (IPHS).
 9. Medical insurance coverage be provided to all tribal population and the medical college be linked for referral care.
 10. Each tribal district should have training schools to train and provide the three-year rural medical graduates, and the nursing and paramedical personnel.
 11. Involvement of voluntary organizations in providing health care in tribal areas be encouraged.
 12. Health status and health care in tribal areas be independently monitored annually.

7.9 Excise Policy

The **Excise Policy for Tribal Areas** prescribed by the Central Government and accepted by the State Government in 1976 should be strictly enforced in Scheduled Areas (including towns). The spirit of this policy has been compromised by subsequently amending the rules and permitting liquor shops in the towns and large villages in the Scheduled Areas. This laxity should be removed.

1. All liquor permits (sale and purchase) in the Scheduled Areas should be cancelled and no shop, bar or restaurant, in and within a periphery of 10 km of the Scheduled Area should be permitted to sell liquor.
2. Tribal communities may be permitted to distil liquor from *mahua* leaves but its production and consumption should be subject to the approval of the women in the *Gramsabha*.
3. The provisions of PESA, as well as recommendations made by the Deotale Committee (in respect of Chandrapur district) should be enforced in all tribal areas.
4. Like gutkha, all types of tobacco and tobacco products should be effectively banned in Scheduled Areas.

7.10 Jobs Reserved for the Tribals

The current deficit in **the employment of ST candidates** should be fulfilled through a definite and time-bound programme. The caste-certificate verification process should be strictly enforced and no bogus or pseudo-tribal people should be allowed to take benefits meant for STs. The loop-holes in the present programmes should be plugged urgently.



CHAPTER 8

The Role & Challenges of New Agriculture

8.0 Introduction

Agriculture continues to carry a major share of burden of the population as well as work-force and therefore continue to play an important role in socio-economic development of the state. In comparison to Rest of Maharashtra, Marathwada and Vidarbha are still characterized by dominance of agricultural sources of livelihood. In these regions industrial development and non-agricultural employment are very low. These regions are marked by poor infrastructure such as poor road and railway connectivity and they are ill-equipped in skilled labour availability. Similar conditions also prevail in some drought prone areas in ROM as well. Agriculture, the main source of livelihood of these regions, faces several challenges which include inter alia (a) making agriculture profitable, (b) generating local employment (c) reducing the burden of population dependent on agriculture. Several policy reforms and 'new Agriculture' initiatives suggested in this report have the potential to achieve these goals.

This chapter presents the discussion on improving productivity of present crop system by various technological interventions, introducing new systems of agriculture, Agro-processing, Agro-based industries, Watershed and irrigation management, Agricultural Education, Extension, Research, Agro-services enterprises, Institutional interventions, New agriculture programs and Policies for accelerated growth of agriculture. The district wise agro-commodity parks, mechanization development, micro-irrigation, horticulture development, dry-land program, agro-forestry, agro-industries, agro-services enterprises, women farmers training, Vocational education, higher education and institutional interventions along with financial allocations considering regional perspectives.

As we have already pointed out in our chapter on Regional Growth: trends and Patterns, stagnancy in agriculture of Vidarbha has been one of the major causes that worsened the regional economic balance.

Year-on Year and Trend CAGR in Agricultural income in different regions is given in Annex 8.1

In the decade of 2001-2010 agriculture in Vidarbha was besieged with several shocks. During last decade, the rainfall pattern underwent unfavourable changes. Not only was the rainfall inadequate but the distribution of rainfall experienced shift in its temporal distribution. This affected the productivity in major crops of the Vidarbha region. These are reflected in year-on-year fluctuations in growth. Out of ten years, for nearly six years Y-o-Y growth was negative. As a consequence the overall growth rate of agricultural income was zero or even possibly negative. Similarly overall satisfactory growth notwithstanding, some of the districts of Marathwada also faced similar fluctuations. Committee has taken a serious note of this alarming situation and the study conducted by the sub-group on Agriculture has investigated the potential areas of policy interventions that would enable these regions to overcome the present crisis of economic stagnancy.

8.1 Regional Development Potential in Agriculture Sector

Our prescriptions are based on the study conducted by the Sub-group on Agriculture. In gauging the development disparity and gaps the several aspects were examined. Subgroup identified 21 indicators for assessment of present state of regional variations, development deficit and the regional development potential in agriculture sector.

1.Horticulture, 2.Forest Cover, 3.Cropping Intensity, 4.Fertilizer Consumption, 5.Agricultural Mechanization, 6.Population Pressure on Agriculture, 7.Agriculture Budget, 8.Livestock, Poultry and Fishery, 9.Land Holding, 10.Drought Prone Area, 11. Watershed, 12.Irrigation, 13.Village Road Connectivity, 14.Compound Annual Growth Rate (CAGR) of Major Crops, 15.Agriculture Labor, 16.Crop Loan, 17.Agricultural Market infrastructure, 18.Agriculture Education, 19.Agriculture Research Centres, 20. Agrobased Industries, 21. Electrical Energy in Agriculture sector.

Tables in the Annexure 8.2 present the data on these indicators which depicts the regional status and development deficit.

Our analysis has identified following major areas that would accelerate agricultural growth of the lagging regions. (1) lack of availability of assured water supply for crops, (2) appropriate missions and incentives for the relevant regional crop pattern, (3) generation and diffusion of technological knowledge together with its institutional support and (4) policy support for the technological leap that would be feasible for the lagging regions. We discuss these in following paragraphs.

8.2 Water Resources in Agriculture

Water is a crucial factor in agriculture and the development prospects of agriculture hinge around it. Increase in irrigation efficiency and resultant improvement of water productivity in agriculture is the key element for propelling development in agriculture. Growing urbanization and industrialization have created an additional demand for water which is primarily diverted from agriculture. In these circumstances, water resources development and management becomes an important issue. Rain water is the basic resource which replenishes ground water and also surface water storage structures. Measures to conserve recharge and storage of rainwater forms the basic strategy of water resource management. *Watersheds are proven and technologically sound option of in-situ and ex-situ conservation of rain water.*

8.2.1 Watershed

Maharashtra has 241.0 lakh ha area suitable for watershed development. (For a more detailed account of these aspects please refer to the chapter on 'Water Resources'). Considering the advantages of Watershed in terms of conservation of soil and Water, aquifer recharge and increasing productivity in rain-fed areas, watershed program must be given topmost priority equal to surface irrigation for next ten years. Agriculture growth and stability in the state will come from special attention on dry-land agriculture. Watershed is primary component in dry-land agriculture technology. *Watershed shall be scientifically treated in a Mission Mode program in all the regions to realize the benefits and widespread impact in dry-land area. Since agriculture growth has to come from vast rain-fed agriculture in Maharashtra, Mission on dry-land agriculture and watershed program must be topmost priority for next ten years.*

Policy initiatives: We recommend that

1. ***regional watershed mission for Vidarbha, Marathwada and Rest of Maharashtra should be created for execution of program in next five years.***
2. ***Mission mode program on dry-land agriculture should be created in convergence with watershed mission and target of increasing productivity of dry-lands within next 10 years should be the mandate of the mission.***

8.2.2 Protective irrigation

Maharashtra has 82% rain-fed area and region wise distribution shows 92.6% area in Konkan, 77.0% in Western Maharashtra, 95.2% in Marathwada and 81.2% in Vidarbha. Rain-fed crops suffer severe losses due to one or two dry spells during *kharif* season. One or two protective irrigations of 5 cm depth each during dry spell ensure normal crop productivity. If micro-irrigation (e.g. drip/sprinkler) is used for protective irrigation, the 5 cm surface irrigation water will cover double the area. Hence, 'protective micro-irrigation' is essential. Therefore, in the entire rain-fed region by making investments in creating water resource through farm ponds, tanks, wells etc along with pump and micro-irrigation set will ensure normal crop yields. The major crops are cotton and pigeon pea which require protective *irrigation through drip* whereas soybean and chickpea can be covered under protective irrigation using sprinkler system. Drip system can be commonly used for cotton and Pigeon pea and *sprinkler system* for soybean and chickpea.

8.2.3 Canal Irrigation

Maharashtra has created 48.25 lakh ha irrigation potential out of which 29.54 lakh ha is actually irrigated. Utilization of irrigation potential created in Rest of Maharashtra is 76.4%, 38.3% in Marathwada and 47.4% in Vidarbha. This shows utilization of potential created is very poor in Marathwada and Vidarbha. Efficient use of stored water and its distribution becomes a key area of intervention. It is important to create water storages by building structures and dams but it is also equally important to have efficient distribution network and utilization. The state has largest number of irrigation projects however; groundwater is still a major irrigation source. Water use efficiency of surface dams is not up to the desired level as major concentration has been on building structures rather than using the water for crops.

8.3 New Command Area Development Agency

It is desirable to establish a New Command Area Development Agency (New-CADA) for all irrigation projects for water distribution, crop planning, mechanization, post harvest technology and value addition through processing industry and making N-CADA autonomous body which would be accountable for overall socio-economic development of command area. The physical target must be measured by considering actual area brought under irrigation. Present system of reporting potential area of the project as achievement and showing this notional-area as irrigated area should be dispensed with. Target of bringing all potential area planned under irrigation projects must be met within next ten-year period. The functions of Water control, release,

utilization, crop planning and water use efficiency and maintenance of canals must be transferred to new N-CADA.

8.3.1 New Command Area Development Agency(N-CADA)

N-CADA must be created with new inter-disciplinary structure to achieve socio-economic development of command area. The functions like the control and managing of water distribution and improving water productivity with appropriate crop planning must be responsibility of proposed N-CADA. While construction and maintenance of dams shall continue to rest with irrigation department, the near-complete control over utilization and release of water must be vested with N-CADA. The proposed N-CADA must have not only control on water release from reservoir but also accountability and responsibility of maintenance of conveyance system, water utilization as per crop requirement, minimizing losses in transport and delivery, improving water productivity by utilizing latest technologies and extension practices in N-CADA region. It should be made responsible for overall socio-economic development of the command area by creating other supportive infrastructure for agro-processing and marketing. N-CADA should be headed by **senior agricultural engineering expert** with inter-disciplinary team of specialists in crops, horticulture, plant protection, mechanization, agro-processing, dairy, agricultural extension, agricultural economics with adequate technical and field support staff. The activities of N-CADA should also co-ordinate and converge with local bodies, other line departments and private sector agencies for achieving the development targets. Annual monitoring by third party should be an integral part of the N-CADA structure. Present CADA structure may be either completely disbanded or suitably transformed into N-CADA for each project. This will improve the efficiency of water use and income along with social development in command area.

8.4 Compulsory Micro Irrigation for High Water Consuming Crops

8.4.1 Sugarcane as fully drip irrigated crop

Major area of sugarcane crop is in Western Maharashtra and Marathwada region with 6.7 and 2.1 lakh ha respectively. Sugarcane is water consuming crop requiring 25,000 m³/ha of water. Drip irrigation saves approximately 50% of water. If 'fertigation' is simultaneously adopted it would save about 40% nutrients. Converting all sugarcane area under drip/fertigation will save 12,500 m³/ha water. This quantum of water saved could in turn be made available for protective micro-irrigation of the rain-fed crops. In other words, for example, crop like pigeon pea requires two protective irrigation of 5 cm depth each which is equivalent to 1,000 m³/ha for ensuring full productivity potential. This implies that by adopting 100% drip irrigation to 1.0 ha sugarcane will assure 12.5 ha pigeon pea crop by providing protective micro-irrigation. This will reflect in doubling the productivity of pigeon pea from average 750 kg/ha to 1,500 Kg/ha.

Sugarcane requires 300:150:150 kg NPK/ha and about 650 kg urea, 940 kg super phosphate and 250 kg muriate of potash per ha. Considering the present market prices of fertilizers this would cost Rs. 17,580 (6500 (N)+6,580 (P)+4,500 (K)) per ha. Fertilizer use efficiency of soil

application is 30% and through drip irrigation (fertigation) it is 70%, a saving of 40%. This will save Rs. 7,032/ha on cost of nutrients for sugarcane alone.

Sugarcane area in Western Maharashtra and Marathwada has been growing in an unplanned manner and has been operative with reduction in productivity. It is essential to restrict the area and we should target productivity of 120 tons/ha. This will not affect the present total production level and would also ensure rational water use for assured production of rain-fed crops in the deprived regions. This means a total water requirement of western Maharashtra for sugarcane area will be reduced to nearly half of the present use. The surplus water available per ha will be sufficient to provide protective micro-irrigation for 7.5 ha of rain-fed crops on the average. If sugarcane crop in Western Maharashtra and Marathwada is converted to fully drip irrigated crop, protective irrigation will be possible for 45 lakh ha rain-fed crops in Western Maharashtra and 15 lakh ha in Marathwada. Cost of converting sugarcane into drip irrigation is given in Table 8.1.

Table 8.1
Cost of Converting Sugarcane into Drip Irrigation

Region	Area (Lakh ha)	Present Productivity (tons/ha)	Target Productivity (tons/ha)	Present Production (Lakh tons)	Target Production (Lakh tons)	Drip irrigation cost for sugarcane @ Rs 0.74 lakh/ha (Rs. Crore)
1	2	3	4	5	6	7
Western Maharashtra	6.7	92	120	700	720	4,440
Marathwada	2.1	71	100	150	200	1,480

Source : Provided by the subgroup on Agriculture

It may be noted that the estimates quoted above are only indicative in nature and based on prevalent norms. These costs will decrease dramatically if more competitive and innovative ways of micro-irrigation are allowed to function.

Sugar industries/ Cooperatives are major stakeholders of sugarcane crop and should evolve a mechanism to convert all sugarcane crop with full drip irrigation. Government should make it mandatory for the industry to discover their own way of reforming the present wasteful practices.

8.4.2 Fruit Orchards fully drip irrigated crops

Fruit orchard area in Rest of Maharashtra (9.23 lakh ha), Marathwada (3.68 lakh ha) and Vidarbha (3.16 lakh ha) must be converted into full drip irrigation to save the water and also improve the productivity. The indicative and illustrative cost of converting all orchard area under micro irrigation system is given in Table 8.2.

Table 8.2
Incentives for Micro Irrigation for Existing Fruit Orchards

Region	Area (lakh ha)	Cost @ (Rs. lakh/ha)	Total cost (Rs. Crore)	Annual cost for incentives for next 5 years (Rs. crore)
1	2	3	4	5
Vidarbha	3.16	0.29*	916	183
Marathwada	3.68	0.29*	1067	213

*Cost includes control unit, piping and micro irrigation system excluding pump;
Source: National Mission on Micro-irrigation guidelines, GOI.

Policy recommendations: Micro Irrigation

We recommend that:

1. Policy objectives and necessary regulations there of would be helpful in bringing all of the sugarcane plantation and fruit orchards under micro-irrigation system. These are essential for economic use of scarce water resource. A scheme needs to be evolved jointly with sugar industry association to switch entire sugarcane cultivation under drip irrigation.
2. Micro-irrigation shall be made compulsory for all new orchards in future. Vidarbha and Marathwada shall be provided special incentives for next 5 years to convert all fruit crop area with micro irrigation to achieve higher water productivity.
3. **'Maharashtra Agro-engineering Company'** should be established for implementation of Micro-irrigation program for sugarcane, horticulture and other crops by converging and merging budget of all schemes and departments. The proposed company shall be headed by professional agricultural engineers and support team for scientific execution of the program.

8.5 Regional Water Budget for Agriculture

Regional water requirement of Agriculture to support the optimal productivity of crops including fruits and vegetables may be worked out by taking into consideration the cropping pattern of the region. The suggestive details are given in Annexure 8.3. Water requirement for surface irrigation of crops is **1,97,958** million cubic meters (Mm^3) and adoption of micro irrigation methods will reduce the water requirement to **1,01,240** Mm^3 i.e. saving of **49%** water. Water use permitted by Tribunal is **1,25,936** Mm^3 . The figures clearly indicate that Maharashtra has 36% deficit of water needed for agriculture. If water requirement for drinking and industry is considered then water deficit for agriculture will further fall.

Maharashtra needs to manage the available water more efficiently. Converting all of the irrigated crops to micro irrigation, implementation of watershed program at much accelerated rate (preferably within next five years), building water conservation and storage structures, saving conveyance losses by using conduit pipes, shifting to crops with low water requirement are the important and priority initiatives required for sustainable growth of agriculture.

Data on Region-wise water use indicates sizable large disparity in the use of available water. Western Maharashtra with 36% crop area uses 47% of the water, Vidarbha with 30% crop area uses 28% water, Marathwada with 31% crop area uses 14% water and Konkan with 3% crop area uses 11% water. There is need to revisit regional water use by providing proportionate share of water to deficit area. This will only give enduring solution to problems of backward region.

Efficient use of surface water, ground water, inter basin transfers to deficit area, recycling of municipal sewage water and industry water with stringent implementation of law and by making more stringent laws on water recycling by industry and urban bodies are some of the policy measures that would be essential.

8.6 Crop Specific Initiatives

8.6.1 Cotton

Cotton is important cash crop covering area of 15.0 lakh ha in Vidarbha and Marathwada each and 11.0 lakh ha in Rest of Maharashtra (Khandesh). Although there is significant jump in productivity of cotton in Maharashtra (343 kg lint /ha) during last decade due to large scale adoption of hybrid Bt varieties, the overall productivity is low as compared to national average of 510 kg lint/ha. Cotton in Vidarbha is primarily grown under rain-fed condition. In Marathwada it is partially irrigated and in Khandesh it has been predominantly irrigated. A major intervention to achieve cotton productivity in Maharashtra is to provide 'protective micro irrigation'. The primary focus in Vidarbha and Marathwada should be on harvesting of rainwater as no other major source of irrigation would be available at least for a decade to come. Lack of irrigation water causes abiotic stress in the cotton crop which results in low productivity. Network of run-off water collection structures (**farm Ponds**) along with catchment area treatment has a potential to create enough water for protective irrigation of cotton during stress period. Water requirement of cotton is about 50 cm which is equivalent to 5,000 m³ per ha. Cotton suffers from moisture stress during two to three long dry spells. Such dry spells generally occur during August to October in Vidarbha and Marathwada. About 3,000m³ of water requirement is generally met through rainfall and remaining 2,000 m³ water will have to be met through protective micro-irrigation. Average annual rainfall ranges between 700 to 800 mm and it has a potential for harvesting and storage of 20% of rain water. During rainy season two to three intense rainy events have potential of enough harvestable water to meet protective micro-irrigation needs. The *in-situ* and *ex-situ* land treatments like gully treatment and drainage line treatment along with designed storage structures are essential for the success of cotton crop in Vidarbha and Marathwada.

The cost of creating resource by land area treatments will differ from location to location, however, considering general type of soil, topography and rainfall conditions in Vidarbha and Marathwada the total development cost will be approximately (at current markets prices) **Rs.59,000/ha (21,000+6,000+32,000)**. This includes the cost of farm pond of size 30x30x3 m with 2,000m³ capacity (Rs. 84,000/- for 4 ha size farm i.e. Rs 21,000/ha), for land treatment Rs. 6,000/ha and for micro irrigation Rs. 32,000/ha for widely spaced crops (Source: National Mission on Micro-irrigation). *The subsidization of micro irrigation unit to the extent of 90% is desirable for assuring sustainability of cotton production in rain-fed area. (Annexure 8.4A)*

The above measures will result in achieving the peak productivity at par with national average of 510 kg lint/ha as target yield of cotton from predominantly rain-fed areas of Vidarbha, Marathwada and also from Khandesh. Additional gain in cotton productivity ranging from 243 kg lint/ha from Vidarbha, 167 kg lint/ha from Marathwada and 191 kg lint/ha from Rest of Maharashtra will bring additional income of Rs.26,910/ha in Vidarbha, Rs.18,720/ha in Marathwada and Rs.21,450/ha in Rest of Maharashtra (Khandesh) (at current prices of Rs.3,900 per quintal)) in terms of seed cotton. The additional annual income from capital investment in development of protective irrigation in cotton crop in Vidarbha, Marathwada and Rest of Maharashtra will be Rs. 4,036 crore, Rs.2,995 crore and Rs. 2,359 crore respectively. Therefore the annual allocation of funds for development of protective irrigation of cotton in three regions would be justified. Recent data and experiences from neighbouring state also support this policy proposition.

8.6.2 Pigeon Pea

Pigeon pea is a major *kharif* pulse crop of Vidarbha (6.36 lakh ha) and Marathwada (5.24 lakh ha). The average productivity of pigeon pea is about 750 kg/ha. Pigeon pea is mostly grown as an intercrop. Two protective irrigations can double the production per hectare. The system for protective micro-irrigation of cotton crop can also be effectively used in pigeon pea crop, (presuming the support in terms of rainwater conservation and storage structures).

8.6.3 Soyabean

During last decade Soyabean crop area has increased from 11.7 lakh ha to 27.3 lakh ha in Maharashtra state and continues to increase. This important emerging crop has been spread across Maharashtra (15.7 lakh ha in Vidarbha, 8.3 lakh ha in Marathwada and 3.3 lakh ha in ROM). Soyabean has been emerged as a major oilseed crop in Maharashtra replacing green gram, blackgram and *kharif* sorghum in Vidarbha, Marathwada and Western Maharashtra. Due to its short duration, suitability to double cropping, distinct yield advantage and better market support, soyabean has proved to be the most remunerative crop in these regions. However, fluctuating productivity of crop due to biotic and abiotic stress has been a major concern. The crop is highly sensitive to moisture stress and water logging conditions. The productivity of soybean has been lowest (1,445 kg/ha) in Vidarbha, 1,700 kg/ha in Marathwada and 1,900 kg/ha in Western Maharashtra. Soyabean with one protective micro-irrigation through sprinkler in rain-fed areas will minimize the risk of fluctuating productivity in Vidarbha and Marathwada. The sprinkler system for soybean and chickpea could be commonly shared.

8.6.4 Chickpea

Next to pigeon pea, chickpea is major pulse crop in Maharashtra. This crop is most important in Vidarbha (5.70 lakh ha), Marathwada (4.40 lakh ha) and RoM (4.0 lakh ha). It is being grown under rain-fed conditions. The average productivity of chickpea is 800 kg/ha. The field trials and experiments have demonstrated that support in terms of rainwater conservation and storage structures along with sprinkler set for chickpea would double the productivity. Estimated investments (at current prices) are as follows: Land treatments @ Rs.6,000/ha,

rainwater storage structure @ Rs.21,000/ha, sprinkler irrigation set @ Rs. 18,500/ha with a total cost of Rs. 45,500/ha.

The capital investment in developing protective micro-irrigation for chickpea (Annexure 8.4B) will result in doubling the productivity. The targeted yield of chickpea 1,600 kg/ha will give additional production of 11.41 lakh tons. As per current market price @ Rs.4,000/q for chickpea, the total additional returns per annum will be Rs. 4,564 Crore.

8.6.5 Paddy

Paddy is another important cereal crop of Vidarbha, Konkan and Western Maharashtra with area of 7.06 lakh ha 4.12 lakh ha and 3.08 lakh ha respectively. The average productivity is lowest in Vidarbha with 780 kg/ha, 1,850 kg/ha in Western Maharashtra and 2,560 kg/ha in Konkan. Paddy in Vidarbha and Konkan is mostly rain-fed, however the reasons for low productivity in Vidarbha are early withdrawal of monsoon and non availability of protective irrigation facilities during critical reproductive phase of the crop which coincides with October-November. Traditional source of irrigation with *Malgujari* tanks are defunct due to siltation. Interventions in terms of creating new rainwater storage structures are essential in paddy belt of Eastern Vidarbha for increasing productivity of paddy crop. The region receives 1,200 to 1,700 mm annual rainfall and has great potential to store rainwater in large storage ponds of size 85x85x3 m with capacity of 17,000m³/ha at a suitable location either at old *Malgujari* tank or alternative locations. Total water requirement of paddy is 120 to 140 cm out of which 35% requirement is from panicle initiation to maturity stage which coincides with October-November. This is the period when monsoon withdrawal takes place and crop suffers from moisture stress resulting in low productivity. The stress period requires protective irrigation of about 45 cm which is equivalent to 4,500m³/ha. This means that above mentioned tank size will provide protective irrigation to about 4.0 ha paddy crop. The capital investment for above sized tank along with pumping is estimated to Rs. 7.2 lakh. This comes to Rs.1.8 lakh/ha. The total cost required for ensuring protective irrigation for paddy crop in Eastern Vidarbha is given in Annexure 8.4C.

The target of achieving 2500 kg/ha paddy productivity (at par with Konkan) with capital investment of Rs. 1.8 lakh/ha in Eastern Vidarbha can be achieved with increased investments. This will result in additional production of 12.14 lakh tons with current MSP @ Rs. 1,250/q for paddy gives additional annual returns of Rs. 1,518 Crore. Therefore, suggested annual investment for development of protective irrigation for paddy crop in Eastern Vidarbha is justified.

Cotton, pigeon pea, soybean, chickpea and paddy are major rain-fed crops in all regions specially Vidarbha and Marathwada which is life line of agriculture in these regions. Protective irrigations for these crops must be given highest priority.

8.7 Crop Development

Major crops of cotton, paddy, soybean, pigeon pea are grown under rain fed conditions in Vidarbha, Marathwada and Rest of Maharashtra. Cotton and soybean are predominant in Vidarbha and

Marathwada whereas pigeon pea is grown in Vidarbha, Marathwada and Western Maharashtra. Paddy in Vidarbha covers largest area with low productivity. These rain-fed crops are life line of most farmers in Vidarbha and Marathwada. Therefore special emphasis on development of these crops for sustainable productivity requires a mission mode approach. In this context, it is proposed to address these issues by instituting following regional missions for crop development.

8.7.1 Cotton Mission for Vidarbha and Marathwada

Cotton in Vidarbha and Marathwada covering more than 30 lakh ha area is major cash crop in these regions, however the productivity is lowest. Major area is under rain-fed condition suffer from stress during crop growth period due to changing rainfall pattern. Rain water management, protective irrigation, nutriment and pest management are some of the factors need special emphasis under the mission mode approach for Vidarbha and Marathwada. It is proposed to establish regional cotton missions for Vidarbha and Marathwada separately with allocation of Rs. 200 crore for cotton development in each of these regions.

8.7.2 Paddy Mission for Eastern Vidarbha

Paddy is a major crop grown in eastern Vidarbha region and it covers more than 7 lakh ha area. Crop suffers from water stress at terminal phase due to early withdrawal of monsoon. As a result of this stress the average productivity is only about 700 kg/ha. Protective irrigation, modified System of Rice Intensification (SRI) method along with nutrient, pest and disease management are some of the technological intervention that are needed for enhancing productivity of rice in Eastern Vidarbha. In addition it would be necessary to promote local processing industries. We propose that “Paddy Mission for Eastern Vidarbha” may be set up with budgetary allocation of Rs. 100 Crore for sustainable development of paddy in Eastern Vidarbha.

8.7.3 Dry-land Agriculture Development Mission (DADM)

Maharashtra state has 82 % area under dry-land agriculture mostly located in Vidarbha, Marathwada and parts of Western Maharashtra. Major food crops, cotton and oil seeds are grown under dry-land conditions. Dry-land agriculture requires special emphasis on implementation of technologies on rain water management, land management, nutrient management and conservation practices. Considering the volume of dry-land agriculture in the state and dependency of major small holder farmers for livelihood on dry-lands, it is proposed to address these issues by initiating a 'Mission Mode' programme for development of dry-land agriculture in Marathwada, Vidarbha and parts of Western Maharashtra with a budgetary allocation of Rs. 500 Crore for Vidarbha and Marathwada each and Rs. 250 Crore for RoM.

8.8 Horticulture Development

Horticulture affords a promise of higher income per unit area as compared to other arable crops. Horticulture area in Marathwada is 1.2% of net cultivated area, 3.7% in Vidarbha, 6.2% in western

Maharashtra and 11.0% in Konkan. Backward regions of Marathwada and Vidarbha need a **program of development of horticulture in the region which should be implemented as a Horticulture Mission.**

8.8.1 Horticulture Mission:

We recommended that '**regional missions on horticulture in Marathwada and Vidarbha should be created**' with the aim of increasing horticulture area in these regions in next 5 years. Incentive of Rs. 25,000/ha for plantation of horticulture crops in Marathwada and Vidarbha would be necessary. Vidarbha should target to bring 3.0 lakh ha additional area under horticulture and Marathwada should target 2.5 lakh ha additional area during next 5 years. This will pave the way for balanced development of horticulture. Separate Regional missions of horticulture for Vidarbha and Marathwada will require appropriate budgetary provision.

Considering potential of Agriculture and the crop diversification, horticultural activities deserve to be carefully nurtured in the regions of Marathwada and Vidarbha. Experiences of Rest of Maharashtra suggest that active producers association duly supported by State government in infrastructure, technology dissemination will be helpful for more accelerated development of the potential. We recommend horticultural mission for Vidarbha and Marathwada for accomplishing focused accelerated development of this crucial sub-sector of agriculture.

8.8.2 Hightech Horticulture

Hi-tech horticulture is a technique wherein microclimate surrounding the crop canopy is controlled partially/fully as per the requirement of plant species during their growth period. Various types of protective cultivation practices have been developed to suit crop species in different agro-climatic condition.

Green house, poly house, shade net are some of the prevailing structures commonly adopted. Protective horticulture or high-tech horticulture is gaining importance due to erratic climatic conditions. Impact of climate change on agriculture is prominently felt during last decade as evident from rainfall pattern and crop failure. Therefore, protective horticulture is new way of ensuring sustenance of crops. In protective horticulture / hi-tech agriculture high value crops (flowers, exotic vegetables etc.) are grown under fully automated controlled conditions. Hi-tech agriculture is capital intensive and needs to be gradually promoted to cover at least 25,000 ha area during next 10 years. Initial incentives @ Rs.250/m² shall be provided to promote protective agriculture. Region wise allocation for promoting protective agriculture is given in Table 8.3.

Table 8.3
Region wise Allocation for Incentives to Promote High-tech Horticulture

Region	Targeted area (ha)	Allocation for incentive @Rs.250/m ² (Rs. crore)	Annual allocation for 5 years (Rs. crore)
1	2	3	4
Vidarbha	10000	2500	500
Marathwada	10000	2500	500
ROM	5000	1250	250

Source : Provided by the subgroup on Agriculture

8.9 Animal Husbandry and Fishery Development

8.9.1 Dairy Sector: Fodder and Livestock Improvement Mission (FLIM)

Livestock is an integral component of agriculture system which provides supportive income. Almost 50% of livestock population of Maharashtra is in ROM remaining 28% is in Vidarbha and 22% in Marathwada. Indigenous cattle population ranges between 25 to 41% of the entire State bovine livestock population in the State. Almost 76 per cent of the entire cross-bred cow population in the State is in Western Maharashtra. High yielding cross breeding population and buffalo population in Marathwada and Vidarbha is very low as compared to Western Maharashtra indicating a development deficit and future potential of growth of dairy sector across regions. Milk availability in Western Maharashtra is 3 to 4 times higher as compared to Marathwada and Vidarbha indicating gap in livestock development in Vidarbha and Marathwada. Regional livestock breeding policy for enhancing productivity of animals should be urgently initiated.

8.9.2 Availability of fodder is another major constraint in development of dairy activity in Vidarbha and Marathwada. There are potential clusters of fodder development in each of these regions. A concerted initiative by the department will increase the productive milk animal population and milk productivity in backward regions and thus help these regions to match the level of development accomplished in western Maharashtra in next 5years These two constraints need to be approached with a special effort in a time bound manner. Very large part of arable land in Vidrabha and Marathwada regions are rain fed. Introduction of suitable fodder varieties and gradual but sustainable improvement of cross-bred high yielding livestock population must be handled in an integrated and mission like approach. On the other hand, development of marketing networks and farmer group based collective initiative should also be simultaneously developed. We recommend a separate mission dedicated to such development on cluster basis for Marathwada and Vidarbha. Annual allocation required for these missions are given in Table 8.4.

Table 8.4
Fodder and Livestock Improvement Mission for Vidarbha and Marathwada

Region	Present milk animals /1000 population	Targeted milk animal population (lakh)	Annual allocation for fodder mission next 5 years (Rs. crore)
1	2	3	4
Vidarbha	48	15.0	15.0
Marathwada	61	10.0	10.0

8.9.3 Sheep and Goat provide stability to family income and needs to be promoted in certain pockets of Konkan, Vidarbha and Marathwada.

8.9.4 Poultry is important sector which provide alternative employment and income opportunities and hence must be promoted in Vidarbha and Marathwada in selective clusters. Back yard Poultry has proven to be best support for small farmer income.

8.9.5 Fishery Development

Fishery is growth contributing sector and needs to be fully explored by creating supportive infrastructure and incentives. Brackish Water aquaculture has potential of 15000 ha approximately in Konkan. Inland fishery has potential to be explored in all the regions especially in Marathwada and ROM. Marine Fishery in Konkan region has great potential.

Marine Fishery

Konkan region has great un-harvested potential in marine fishery due to non-availability of adequate infrastructure in coastal region. Major emphasis on development of road connectivity network in coastal region, building of cold storage chain and development of ports is needed for growth of marine fishery in Konkan coastal area.

Policy for Growth of Fishery Sector

1. *Long term contracts for fishery tanks (minimum 5 years) would be desirable for attracting sustainable private investments in this sector.*
2. *Policy reforms to attract private investments in fish hatchery.*
3. *Incentives for mechanization in deep sea fishing*

8.10 Maharashtra Agricultural Mechanization Mission

Agriculture sector traditionally provided employment for large number of people. However, growth of other sectors like industry and services during last decades and urbanization created better opportunities of employment diverting rural work force to these sectors. Secondly social programs of the Government in rural sector provided food subsidies and employment guarantee through MGNAREGA. These situations have created new syndrome of labor scarcity in agriculture sector. Availability of labor and its cost became frontier issues in agriculture. Agriculture operations involve drudgery and discomfort and new generation seldom would like to walk behind the plough in rough field for miles and miles. In this back drop Mechanization of

Agriculture is recognized as the only way to sustain agriculture with minimum but skilled work force.

Mission Mode Approach proposed for mechanization of agriculture would ensure desirable strategic interventions necessary for development and popularization of region specific mechanization tools systems. It involves two pronged strategy: (a) Institutional arrangement for design, development, testing of tools and also training to create skilled human resource (Proposed Institute of Agricultural Mechanization in each region), and (b) Regional Missions of Agricultural Mechanization for Vidarbha, Marathwada, RoM for undertaking functions involving industrial extension, field demonstrations, adoptions and popularization of need based tools and machinery along with policy initiatives for expanding mechanization in all regions of the state within next decade.

8.10.1 Institute of Agricultural Mechanization (IAM)

IAM attached to each State Agricultural Universities with financial support of Rs. 100 Crore for R&D, testing, training and demonstration of farm tools and equipments suitable for the region will boost the mechanization in the regions. These Institutions should also have mandate of linkage to extension in agriculture machinery in the regions. Available human resource in the Agricultural Universities may be used as core faculty and rest of the technical and support staff can be employed on Contract basis. This Institute should generate income from testing and training to meet its operational expenses after 5 years. Regional allocation required for promoting mechanization is given in Annex 8.5 where as list of Agricultural machineries that needs incenting for next 10 years is given in Annex 8.6.

8.10.2 Regional Agricultural Mechanization Missions (RAMM)

There should be four regional Missions of Agricultural Mechanizations each for Vidarbha, Marathwada, Konkan and Western Maharashtra. These missions should employ Agricultural Engineering Graduates and Post Graduates for identifying local needs of tools, identifying sources, conducting feasibility tests and finally adoption through appropriate subsidization and incentives. Production of new tools by industry is an essential component of mechanization program hence policy initiatives to encourage industry to produce quality tools and machines is proposed. Some of the precision machineries are very expensive and not affordable by small individual farmers therefore it is proposed to establish “Custom Hiring Centres” in rural clusters for benefit of large number of small farm holders. All regional Missions should be made accountable for mechanizing agriculture in time bound period with mission funds.

Agriculture mechanization policy

- i. Policy guidelines for public private partnership in design and development
- ii. Separate Regional mission on agricultural mechanization in Vidarbha, Marathwada Konkan and Western Maharashtra.
- iii. Exemption of taxes on agricultural machinery

- iv. Policy on incentives and subsidies
- v. Divesting powers of MAIDC as intermediate agency for implementing mechanization schemes, this should be part of regional missions.
- vi. Incentives and subsidies must be made on-line and time frame for implementation must be well defined. It would be useful to study and learn experiences of other states in streamlining and targeting these benefits more effectively. Incentives on large tractors (above 35 hp) shall be enhanced to 30% for next five years and on agricultural implements it should be increased up to 60% in Vidarbha, Marathwada and drought prone regions of RoM.
- vii. Custom hiring centres for farm implements should be promoted in cluster of villages with exemption of taxes and 30 to 50% cost incentives for new enterprise on individual basis, group and cooperatives.

8.11 Custom Hiring Centres for Agriculture Machinery and Implements

Farm holdings are rapidly fragmenting over time and becoming non-operational. Agriculture machinery and Implement bank in each/cluster of villages for providing operational services to farmers on rental basis through establishment of Custom Hiring Centres will boost the agriculture operation of small holder farmers. This should be promoted as an enterprise at village level by appropriate training to rural youth and providing incentives for purchase of implements as needed by the farmers and also making available easy credit to meet capital and operational expenses of the Custom Hiring Centres. This will create employment opportunity in rural area and provide services to farmers.

8.12 Agro-Industries Development Program (AIDP)

Maharashtra has only 14% agro-industries in spite of being leading agrarian state. Almost 58% industries are concentrated in Western Maharashtra. Marathwada and Vidarbha are industrially backward regions and have great potential for agro-based industries. Cotton, soybean, pigeon pea, chickpea, citrus, mango are major commodity strengths in these regions. Each district of the Maharashtra has major commodity strength and surrounded by cluster involving neighbouring districts. Agro-commodity parks in each district are proposed to make use of raw material available in the district for processing, value addition and marketing with all supporting infrastructure either through fully public funded or in partnership with private agencies.

Agri-Commodity Parks (ACP)

Agro-based industries and commodity parks are proposed for each district at a total cost of Rs 2,460 Crore, which will facilitate conversion of raw commodity into value added consumer products that will boost agriculture income from the region and also create employment opportunities within the districts and facilitate agricultural growth. Regionwise proposed Agro-processing industries/parks are shown in Table 8.5.

8.13 Regional Agro-Industries Development Corporation – A New Role

Agro-Industries Development Corporation is expected to play a major role in development of agro-industries sector and also in maintenance of regional balance. It is desirable to **trifurcate present MAIDC into three independent regional autonomous units** in Vidarbha located at **Amaravati**, Marathwada located at **Latur** and RoM located at **Kolhapur** with special focus on agro-industry development in the regions. Higher allocation for backward regions of Marathwada and Vidarbha is would be desirable for faster development of agro-based industries. New regional AIDC we propose should be an autonomous agency headed by **technology management experts** with a target of development of agro based industries in the regions within ten years period. Regional AIDC should not do any business on its own and function as agro-business promoting and regulatory body.

Governing Board of MAIDC should comprise of Minister for Agriculture as Chairman, Secretaries/Commissioners of Industry, Horticulture, Animal husbandry, Fishery, Divisional Commissioners from each of the three regions. Governing Board should appoint expert members one from each region for three year period. One of the Managing Director of regional AIDC should serve as Member Secretary of the Governing Board in rotation..

Table 8.5
Region wise Proposed Agro-processing Industries /Parks

Region	District	Industry *	Cost estimate (Rs. & Crore)
1	2	3	4
Vidarbha	Amravati	Mandarin Park +	100
	Akola	Pulse Park +	70
	Bhandara	Dairy +	50
	Buldhana	Seed processing +	100
	Chandrapur	Soybean Processing+	50
	Gondia	Rice Park +	50
	Gadchiroli	Forest Product Park +	100
	Nagpur	Mega Food Park +	100
	Wardha	Sericulture Park+	30
	Washim	Soybean Park +	70
	Yavatmal	Mega Cotton Park +	120
Sub Total			840
Marathwada	Aurangabad	Mega Feed Park +	100
	Beed	Starch +	50
	Hingoli	Turmeric +	40
	Jalna	Sweet orange +	100
	Latur	Soybean park +	70
	Nanded	Banana Park +	80
	Osmanabad	AEZ Grape +	80
	Parbhani	Mega Cotton Park +	100
Sub Total			620
ROM	Raigad	Fish Park +	100
	Ratnagiri	Cashew park +	50
	Sindhudurg	Mango Park +	100

Region	District	Industry *	Cost estimate (Rs. & Crore)
1	2	3	4
	Thane	Rice Park +	50
	Ahmednagar	Meat Park +	100
	Dhule	Onion Park +	50
	Jalgaon	Banana Park +	100
	Kolhapur	Floriculture +	50
	Nasik	Vegetable Park +	100
	Nandurbar	Chilli Park +	50
	Pune	Wine Park +	50
	Sangli	Dairy +	50
	Satara	Mega Food Park +	100
	Solapur	Pomegranate Park +	50
Sub Total			1,000
Total			2,460

*Major commodity + other commodities based on local raw material availability

Source : Provided by the Subgroup on Agriculture

8.14 Agriculture Credit and Inputs

8.14.1 Access to Credit

There is disparity in distribution of loan/ha over average cost of cultivation between regions. Rest of Maharashtra gets 14.3% credit/ha with respect to cost of cultivation, where as in Marathwada it is 6.3% and Vidarbha 7.3% indicating the lower credit access in backward regions of Marathwada and Vidarbha. There is also disparity in loan distributed per cultivator with Rs. 6,060 in Western Maharashtra, Rs. 3354 in Marathwada and Rs. 4487 in Vidarbha. Commercialization and diversification of agriculture over the years has accelerated the demand for larger flow of credit to farmers. New agriculture with intensification, hi-tech and increased demand for inputs and infrastructure can sustain only with adequate and timely credit support. In Maharashtra rural financial institutions (RFI) play a major role in credit supply in addition to support from nationalized and cooperative banks.

Average number of cultivators during last 5 years availing credit in different regions of Maharashtra indicates 55% from RoM, 24% from Marathwada and 21% from Vidarbha. Loan distribution targets were Rs.4,456 crores for RoM, Rs.1,363 crore for Marathwada and Rs. 1,387 crores for Vidarbha, out of which achievement was 87% for RoM, 82% for Marathwada and 92% for Vidarbha. Loan distribution per ha also indicate Rs. 3,909 for RoM, Rs. 1,727 for Marathwada and Rs. 2,098 for Vidarbha (Commissioner of Cooperation, Pune, 2012). The credit distributed per ha is low in Marathwada and Vidarbha indicating regional disparity. There is a need to increase the scale of finance in Marathwada and Vidarbha to create access to credit for large number of farmers as well as making adequate target loan amount for disbursement. Percentage of loan dispersed per ha in Marathwada and Vidarbha show only 6 to 7% of average cost of cultivation as compared to 14% in RoM. The loan disbursed is such a meagre amount that farmers in Marathwada and Vidarbha suffer during crop growing season and incur productivity losses. Credit distribution 2011-12 shows 56%

allocation to Western Maharashtra as compared to 21 and 19% in Vidarbha and Marathwada respectively. This is indicative of large gaps in credit allocation. There is clear mismatch between cost of cultivation and scale of finance in Marathwada and Vidarbha.

8.14.2 Access to Agricultural Inputs

(i) Seed:

Seed requirement and availability indicate a large gap. It appears farmers use either their own seed or get poor quality seeds from local market seriously affecting the productivity. Existing taluka seed farms shall be effectively used for production of quality seeds and ensuring local availability at taluka level to bridge the demand-supply gap of 3.53 lakh tones. One time support of Rs 10 Lakh for each taluka seed farm to reactivate seed production as per local demand is proposed to provide access to quality seed.

8.15 Agriculture Labour Training School (ALTS)

ALTS in all Agricultural Universities offering certificate courses for skill development in Agricultural operations and new agriculture practices to agricultural workers is proposed. Admission criteria should not have any specific qualification or age barrier but experience to work as an agriculture labour. A lump sum grant of Rs. 50 Crore to each of four agricultural Universities and MAFSU for this program is recommended for establishment of ALTS.

8.16 Agricultural Education

Agriculture education is presently through four regional agricultural universities one each in Vidarbha, Marathwada, Western Maharashtra and Konkan and one Animal and Fishery sciences University. The basic mandate assigned to these Universities is advancement in agricultural education, research and imparting extension education to train extension workers in transfer of technology. Universities have faculties of Agriculture, Agricultural Engineering, Horticulture, Home Science, Forestry, Agribusiness Management, Biotechnology with Under-graduate and post-graduate programs. The Universities also deals with lower agricultural education through Agriculture Technical Schools (ATS) and Mali Training Centres. In addition total 44 KVK's are spread across the regions of the state in all four agricultural universities jurisdiction. Maharashtra Animal and Fishery Science University (MAFSU) located at Nagpur imparting undergraduate and post graduate education in veterinary sciences, fishery and dairy.

Agriculture education is essential component of agriculture growth in the state as new agriculture can produce results if educated and skilled human resource gets into agriculture. In this context there is an urgent need to expand agriculture education by opening new university, colleges and schools. Maharashtra has nine agro-climatic zones and agriculture in each of this zone has different requirements. Agriculture research and education must be focused zone wise. Present agricultural universities in Konkan, Western Maharashtra and Marathwada have infrastructure by and large to cater needs of agro-climatic zones in the region, however, eastern and western Vidarbha have absolutely different agro-climatic conditions. Agriculture university located in Western Vidarbha has large

jurisdiction and relatively very low research and educational infrastructure in Eastern Vidarbha which needs a special emphasis on agricultural education and research for growth of the region.

Therefore, a new agricultural university for Eastern Vidarbha located at Gadchiroli / Sindewahi is essential for growth of the Eastern Vidarbha region. It is also essential to have one 'agriculture college at each taluka' level and one 'agriculture polytechnic' in a cluster of villages with one lakh population in rural Maharashtra.

8.17 Recommendations

(a) Vocational Agriculture Training Institute (VATI)

Agriculture and allied sectors have very large potential for employment and with new agriculture initiatives will need very specialized skills in operation, management, repair & maintenance, seeds, nursery, plant protection, post harvest and processes, livestock management, poultry, dairy, other enterprises. Each region shall have one VATI with location specific trade training ranging from 4 weeks to 2 years duration vocational training with adequate intake capacity in each trade. VATI with budget of **Rs. 100 crore** each shall be ideal in each region.

(b) Farm Women Training Institute (FWTI)

Women constitute almost 70 % of work force in agriculture however they are not geared up for higher skills and knowledge required for new agriculture interventions. Most operations in agriculture undertaken by women are often causes drudgery and reduces efficiency. Maharashtra as progressive state should initiate pioneer program for training farm women and women farmers. It is highly desirable to open new training Institution in each region (FWTI) which will bring new dimensions in facilitation of agricultural growth. Training modules suitable to regional/local conditions may be evolved by experts and training schools offering certificate courses be affiliated to Agricultural Universities in the regions. FWTI may be opened in backward regions and located at prominently dryland districts of Yavatmal (Vidarbha), Beed (Marathwada), Solapur and Sindhudurga (RoM) at a cost of Rs. 100 Crore each.

(c) New Agricultural University for Eastern Vidarbha

Eastern Vidarbha is located in separate agro-climatic zone with high rainfall. This is altogether different from Western Vidarbha region. Present Agricultural University located in Western Vidarbha mainly deals with dominating cotton-soybean crops and black soils. Eastern Vidarbha with relatively large forest area, significant tribal population, rice based rain-fed crops, spreading boundaries of left wing extremism requires special attention for agricultural development of the region. We recommend to establish a new agricultural university in Eastern Vidarbha region shall be located at Gadchiroli/Sindewahi.

(d) Agriculture Colleges and Polytechnics:

It is also essential to have agriculture college at each taluka level and one agriculture polytechnic in a cluster of villages with one lakh population to create human resource for vast agriculture sector.

8.17.1 Agriculture Research

The focus of research must be more on natural resource management (land, water, climate) and region specific commodity development approach. Vidarbha has major rain-fed area and major crops like cotton, soybean, pigeon-pea, chickpea, paddy, fruits, and vegetables, in addition milk, poultry and inland fish are major commodities requiring state of the art research infrastructure dealing with production, processing and marketing issues. In Marathwada cotton, soybean, pigeon-pea, sorghum, mango, citrus, pomegranate, milk and inland fish are major commodities, in Western Maharashtra fruits, vegetables, flowers, small ruminants, poultry and in Konkan cashew, spices, marine fish are major research areas that will facilitate growth of the sector in the region. Livestock, Dairy, Poultry, Fishery sector research needs to be strengthened. In addition in all the regions there is a need of commodity specific agro-processing research centres, farm machinery research and service centres, tribal agriculture research centres, organic farming research centres for promoting growth of new agriculture.

8.17.2 Maharashtra Council of Agricultural Research (MCAR)

Maharashtra state continue to have large volume of agriculture sector in terms of population and area, therefore agriculture will continue to remain major source of livelihood for rural population at least for next two decades. Therefore, state must backup agriculture with more institutional support for research, education, training and extension. We recommend the establishment of Maharashtra Council for Agricultural Research (MCAR) on the lines of Indian Council of Agricultural Research (ICAR). The state has presently Maharashtra Council for Agriculture Education and Research (MCAER) for co-ordinating the activities of four agricultural universities. This institution has served its purpose of co-ordination in academic matters of four agricultural universities with very limited human resource.

MCAER should be replaced by MCAR with mandate of planning and development of agricultural research, education and extension structure for vibrant agriculture sector. MCAR should be autonomous body headed by ***eminent agricultural scientist/academician*** supported by specialists in management of research, education and extension apart from specialists in sub-sectors of crops, horticulture, agricultural engineering, economics, livestock and fish. MCAR should also have mandatory function to maintain a regional balance in development of agriculture research in the state. All state agricultural and animal & fishery universities should be affiliated to MCAR for research and education. The governing body of MCAR should have representation from all three regions and shall be chaired by chief Minister with Minister of Agriculture, Cooperation, Animal Husbandry, Fishery, Horticulture, and Irrigation as members. Senior Minister from above ministry nominated by Chief Minister should function as Vice Chairman of MCAR. The governing body should also have farmer's representative of each region for 2 year period and Vice Chancellors of all agricultural and animal sciences universities as member of governing body.

*It is proposed that **Rs. 500 Crore** grant shall be allocated for establishment of MCAR. The location of MCAR shall be in central part of the state preferably Aurangabad (Marathwada).*

8.17.3 New Agriculture Research Centres Proposed

- Agro-processing Research centres (Commodity based) -**Regional**
- Agriculture Machinery Research Centres (Institute of Agricultural mechanization)-**Regional**
- Organic Farming Research centres - **Regional**
- **Marathwada:** Research centre for Pigeon pea, Millet, and Cotton technology
- **Vidarbha:** Research centres for Paddy, Pulses, cotton
- **Konkan:** Cashew research centre
- **Khandesh:** Banana research centre
- **Tribal Agri** research centres: Nandurbar, Melghat, Kinwat, Gadchiroli, Jawhar.

8.17.4 ICAR Research in the State

Indian Council of Agricultural Research (ICAR) has established following specialized research Institutes in the state. MCAR should develop linkage with these Institutes for the benefit of the state by appropriate region specific agreements for locally relevant research. Joint research and development program of ICAR and MCAR through universities can be formally organized. ICAR and MCAR should evolve common and shared research programs in respective areas of specialization of there Institutes.

- i. Central Institute of Cotton Research, Nagpur
- ii. Central Institute of Research on Cotton Technology, Mumbai
- iii. National Institute of Abiotic Stress Management, Malegaon/Baramati
- iv. National Research Centre for Citrus, Nagpur
- v. National Research Centre for Grapes, Pune
- vi. National Research Centre for Pomegranate, Solapur
- vii. National Bureau of Soil Survey and Land Use Planning, Nagpur
- viii. Directorate of Onion and Garlic Research, Rajgurunagar, Pune

In addition Water and Land Management Institute (WALMI) and Vasantdada Sugar Institute (VSI) are engaged in water and sugarcane research

Agriculture will be facing severe challenges in coming decades, hence to keep pace with emerging problems state agricultural universities and other regional research institutes needs to be strengthened for sustainable food, nutritional and environmental security in the region.

8.17.5 Strengthening of State Agricultural Universities and MAFSU

Agricultural universities have very low operational budget for education, research and extension activities. Special grants must be provided to establish state of the art facilities to cater the regional research needs of agriculture. *Each agricultural University and MAFSU*

*shall be provided special development grant of **Rs. 100 crore** for creation of state of the art infrastructure for education and research.*

8.17.6 Agriculture Extension Services

Agricultural Extension service is weak link in value chain of agriculture. Extension workers initially inducted in agriculture service are now engaged mostly in development activities and implementation of the projects. New agriculture is knowledge based and requires special training and skills. Extension activities to disseminate knowledge to farmers are missing. Farmer's today must be well informed about new technologies and policies to be able to adopt new methods of agriculture. Extension program like 'KRISHI-MAHOSTAV' of neighbouring state for one month duration covering each village by university scientists, agriculture department, bureaucrats and political leaders for last four years has a great impact on agricultural growth. The following initiatives and policies will activate the extension services in the state.

8.17.7 Establishment of District Extension Services Units (DESU)

DESU at district head quarters with specialists in Agriculture Mechanization, Agro-Processing, Soil-water conservation, Agronomy, Horticulture, Agricultural Extension, Livestock, Fishery etc with infrastructure and facilities to reach each and every village creating awareness through exhibitions, exposure visits, using services of innovative farmers, religious leaders, providing e-agri seva facility in village and many other innovative activities for dissemination of knowledge. DESU should have 2-3 regular core faculty members and rest specialists can be hired on contractual basis. Infrastructure at district level including offices, museums, technology banks, mobile services vans and other support facilities should be created. There should be quarterly monitoring of DESU programs and shall function under the control of Agricultural University. It is estimated that Establishment of DESU in each district should require Rs. 50 crore which will open a new vista for agricultural extension in the state.

8.17.8 New Agriculture for Growth

'New Agriculture is about capturing advances in innovations and methods and diffusing them for high economic and social returns'.

Regional Strengths

Vidarbha region has major share of state's area and production of paddy, cotton, soybean, pulses and oilseeds; specifically almost 48% area and 39% production of kharif rice, 38% area and 33% production of cotton, 57% area and 52% of production of soybean, 40% area and 40% production of pulses, 46% area and 46% production of oilseeds. Western Vidarbha has good soil and rainfall. There is potential of diversifying to fruits, vegetables, fodders and dairy. Cotton and soybean are major commodities which has potential for cotton processing industry and soyabased food and oil industries apart from pulse milling. Eastern Vidarbha is rice bowl and potential region for establishing rice based agro-industries. Marathwada

accounts for 39% area and 42% production of cotton, 30% area and 32% production of soybean, 35% area and 35% production of sorghum (*kharif+rabi*), 35% area and 35% production of pulses, 32% area and 32% production of oilseeds. Marathwada has greater potential for diversification to mango, pomegranate, banana, turmeric, onion, vegetables and flowers. Cotton, soybean and pulses are major commodities. There is great potential for cotton processing industry, soya food processing, fruits and vegetable processing industry, export quality grapes. Sugarcane is also important crop and brought significant change in the region due to sugar industry.

Western Maharashtra has 56% area and production of sorghum (*kharif+rabi*), 62% area and production of maize (*kharif+rabi*), 77% area and 82% production of sugarcane. Grape, pomegranate, banana, guava, onion, vegetables, milk, poultry, flowers are major commodities have great potential for processing industry and export. Irrigation and enterprising farmers is the strength of Western Maharashtra. Konkan accounts for 28% area and contributes 38% production of *kharif* rice. The fruit treasure of Maharashtra lies mainly in Konkan (Mango) and western Maharashtra (Grapes, banana and pomegranate) with Vidarbha accounting for oranges. Western Maharashtra's strength also include floriculture, high value vegetables, poultry eggs and milk production; the region accounts for 65% of state's milk production.

Despite the regional production strengths, the productivity of major commodities are considered low compared to the national average. Infrastructure deficiencies remain a main cause in Vidarbha and Marathwada regions and drought prone regions of western Maharashtra; as the agriculture in these region is predominantly rain-fed. Even good production years face poor agricultural market. To achieve the required potentiality with stabilizing impact and for overall agrarian economic balance, prospective regions also need to be strengthened and related deficiencies need to be redressed.

8.17.9 Contract Farming

Contract farming can also ensure profitability to small and marginal farmers. Government initiatives are needed to encourage the private players towards agriculture sector allowing conducive environment to promote contract farming. Private players have coordinated links with terminal markets. By encouraging and implementing contract farming, farmers will get better prices and reduce price risk. District level contract farming cell should be established to promote contract farming. There is a need to develop strict but workable regulations on contract farming whereby farmers and industry interests are protected and there is win-win situation.

There are several avenues for exploiting the advantages of contract farming across all the regions. Opportunities of contract farming exist when the agriculture commodities are needed for further processing. Vidarbha and Marathwada have great volume of cotton and soybean trade. Similarly, paddy in East Vidarbha has considerable potential in large and high volume trade. Chilly turmeric, mangoes, range of citrus fruits, ginger, medicinal plants have great potential for contract farming opportunities. In the coming decades, with the rising crop

diversification these arrangements will be helpful for the agricultural growth in the lagging regions. It may be noted that the working of co-operatives in sugarcane and milk processing are in fact forms of contract farming.

Contract farming is a tripartite arrangement with private agri business companies, agricultural producers and the government and can be considered as a private-private-public partnership alliance. Contract farming infuses technology and capital in agribusiness. It will empower small and marginal farmers to get the competitive prices for their produce. It also reduces the price and yield risk of the farmers. The public sector has a major role in providing the right environment in the form of institutional arrangements to ensure efficiency in contract farming. For example public sector can assure a sustainable company- farmer relationship by encouraging mutual respect compliance and transparent negotiation process.

Government interventions will be necessary for facilitating upgrading of the existing supply chains helping agribusiness firms and farmers to innovate ensuring better investment climate and providing market information to reduce transaction costs.

8.17.10 Policies

- i. A contract farming cell at district level may be established comprising of both public and private stakeholders (government officials, market researchers, farmers, traders, processors, consumers, NGOs and others) to monitor, investigate, analyze and advise contract farming interventions.
- ii. The private sector has to play a well defined role to make contract farming a mutually winning proposition.
- iii. To encourage the private sector to make investments under PPP mode, changes in regulatory framework, liberalization of credit norms to facilitate agribusiness firms, and review of legal instruments to facilitate the entry of private industry in contract farming business, making provisions to allow private firms to cover price and yield risks for farmers.
- iv. The state Agricultural universities and Agriculture Department needs to support agribusiness firms and NGOs in capacity building of Contract farmers.
- v. The public sector should ensure that contract agreement brings in increased competition, ensures guaranteed market for the farmers produce, transfer of money to the farmers and sufficient market information for making right selling decisions.
- vi. Many innovations are possible in promoting Contract farming. Innovative pricing, share in the company equity etc. will strengthen this new mode of partnership.
- vii. The infrastructure for grading, sorting, packaging and warehousing is required. The public sector can support the development of building such market infrastructure.
- viii. Union government should follow a stable and predictable EXIM policy in agricultural exports. Farmers and exporters need to create and consolidate the export market access with a reputation of being reliable supplier of quality products. Hence any frequent change in export policy concerning agricultural exports should be avoided.

8.17.11 Integrated Farming System

Livelihood of small and marginal farmers which comprise 84% of total farmers in the state particularly in Vidarbha, Marathwada and drought prone regions of Maharashtra depends mainly on crops and livestock which is often affected by weather aberrations. In Vidarbha and Marathwada, the cropping pattern is dominated by cotton, cereals, oilseeds and pulses. Expenditure on labour, seed, farm machinery, fertilizers, manures and irrigation constitutes about 40 per cent of the gross crop income. Non food commodities constitute more than 50 per cent farm family expenditure. The income from cropping alone is hardly sufficient to sustain the family of small and marginal farmers. Farming mainly remains subsistent and often uneconomical. Assured and stable output is necessary to face the challenges posed mainly by environment and economics. As there is no scope for horizontal expansion of land for cultivation of farm enterprise and emphasis has to be on vertical expansion by increasing the productivity using the available resources properly choosing the best enterprise mix.

Integrated farming systems approach is proven to be effective for enhancing profitability of small and marginal farm-holders. Their income can be increased by expansion of farm activities, viz. improved dairy farming, goat, poultry, bee-keeping, etc. besides providing low cost technology and proper prices for farm produce. There is necessity of promoting region specific farming systems incorporating the major cropping pattern of the region that is tailor-made and designed to lead to substantial improvement in energy efficiencies at the farm and help in maximum exploitation of synergies through adoption of close cycles.

8.17.12 Organic Farming

Organic farming policy has devised a roadmap for developing the whole value chain from the farm gate to the consumer. The policy has defined organic farming as an integrated method, which uses local natural resources for farming and which rejects the use of chemicals for cultivation. Such a farming method will help improve the quality of land and reduce air and water pollution. Number of farmers' groups has been practicing organic farming. The total area under organic farming is still small, but it is growing steadily due to remunerative prices of such farms products in the metropolitan area. **It is reported that 6.5 lakh ha area is under organic farming in Maharashtra (CII, 2012).** The policy has set an aim of converting 10 per cent of the total farmland to organic farms, and 25 per cent of the farm lands to use some agronomic practices of organic farming.

Farmer's apprehension towards organic farming is rooted in non-availability of sufficient organic supplements, bio fertilizers and local market for organic produce and poor access to guidelines, certification and input costs. ***A separate cell needs to be created at district level which will monitor the growth of organic farming and to support in*** creating market, packaging, processing and cold storage units. Organic farming in tribal area, organized groups in all regions need to be encouraged through district cells.

8.17.13 Agro-Tourism

Agro-tourism is an alternative farming enterprise that is defined as “a business conducted by a farm operator for the enjoyment and education of the public, to promote the products for the farm, and thereby generate additional farm income”

In general, agro-tourism is the practice of attracting travelers or visitors to an area or areas used primarily for agricultural purposes. However, Agro-tourism is small-scale, low-impact, and, in most cases, education-focused. Because landowners operate the majority of farms in Maharashtra, opportunities for uniqueness and customization are limitless. Many agro-tourism activities require only a small farm crew in order to be successful. For instance, farm tours, bed and breakfasts, Tractor / bullock cart rides, grapes, mangoes, and other horticulture farms, by product farms, birds / animal zoos, and many other activities may be operated with little additional investment in labour.

Maharashtra has a great potential to the development of agro-tourism, because of natural conditions and different types of agricultural products as well as variety of rural traditions, festivals. More than 45 percent of population live in the urban areas and they want enjoy rural life and to know about the rural life. It is a good opportunity to develop an agro-tourism business in Maharashtra. But there is a problem of low awareness about this business in the farmer and problem of the finance and proper view in the farmers of the Maharashtra. Hence, there is need to orientation about agro-tourism and provide some innovative ideas. The government shall provide optimum financial aids to the agro-tourism activities in Maharashtra by the grants and institutional finance.

8.17.14 Tribal Agriculture

Maharashtra is third largest state of the country constituting 9.4% of India's geographical area. The state has 48 schedule tribe identified by state. There are four primitive tribal groups identified by the Central government, present in state. They are distributed in different parts of Maharashtra from west, north west, north central and eastern areas in about 15 districts namely Satara, Pune, Ahmednagar, Aurangabad, Nashik, Thane, Dhule, Nandurbar, Jalgaon, Buldhana, Washim, Akola, Amaravati, Wardha, Nagpur, Gondia, Bhandara, Gadchiroli, Chandrapur, Yavatmal and Nanded. Schedule tribe are residing in Schedule V area as well as in other areas. But they are concentrated in schedule V areas. Tribal department has established Project offices in mainly Notified tribal areas and in nearby areas. These areas are hilly and have good rainfall and forest cover. Schedule tribe's population in the state is about 8% of total population.

Traditionally forest produce, agriculture and limited migration were livelihood options in this entire area. But in last few decades, scenario has changed drastically. Forest is degraded or banned for use due to various factors like tree felling, mining, development projects, conservation projects etc. Agriculture productivity is very low as most of the land is hilly and undulating with poor soil quality. At the same time, agriculture inputs and new information about agriculture has not reached optimally to these areas. Formation of area specific small courses related to agriculture, water, livestock and forest for youths from any educational

backgrounds. Tribal Agriculture Research Centres in different agro-ecological zones may be set up in the major tribal districts under TSP.

8.17.15 Soil Health

Soil loss due to erosion in Maharashtra is 775 Million tons per year losing about 8% nutrients (62 Million ton) of total eroded soil per annum with value of Rs 1.86 billion crore. This also results in agriculture productivity loss of about Rs. 2,500 crore per annum (IGIDR Report, 2007). Soil fertility index of Maharashtra is medium nitrogen, low phosphorus and high potash content (State Agri. Dept, 2011). Micronutrient deficiency especially of Zinc 45%, Iron 23%, Manganese 3% and Copper 2% is alarming sign whereby application of these nutrients shall add to the cost of production by 10-15%. The loss of organic carbon from eroded soil in Maharashtra is 3.1 Million ton per annum considering 4g/kg organic carbon content in soil.

Another major cause of land degradation is Salinity and sodicity in Purna Valley of Vidarbha and canal command area of Western Maharashtra and Marathwada, coastal salinity in Konkan that needs reclamation programs. Land resource is critical for agriculture and current scenario indicate continuous process of degradation and declining soil quality with overall impact on loss of productivity and high production cost. Investment for land degradation control and reclamation measures in different regions of Maharashtra is needed.

8.17.16 Soil Health Issues

- i. Depletion of organic carbon in soil and deficiency of major and micro nutrients observed in all regions need a long term and short term strategies for restoring soil health.
- ii. Promotion of Green manure practice, incorporation of crop residue in soil rather than burning, promoting local production of compost/vermin compost and conjunctive use of manures and fertilizers is essential for soil health restoration.
- iii. Integrated Nutrient Management (INM) is proven practice to maintain soil health without compromising productivity, which combines organic and inorganic nutrient sources shall be promoted.
- iv. Considering higher cost of fertilizers, availability constraints, poor use efficiency, it is essential to move to organic sources of nutrients which include biomass, crop residue, compost, bio-fertilizers and also gradually target at least 10% area under certified organic farming in next 10 years to take advantage of market for organic produce.
- v. Soil test based nutrient management is essential to rational use of fertilizers. Network soil testing laboratory be created in all agriculture colleges and schools, local science colleges, qualified private entrepreneurs be promoted to provide soil health cards and also advisory on nutrient use to farmers.
- vi. Fertilizer subsidy shall be directly given to farmers rather than industry.

8.17.17 Soil Test Laboratories

Soil test laboratory with facility to analyze major and micronutrients in each Taluka needs to be established for providing soil health services and advisory to the farmers on soil health. Region wise allocation of resources for soil test laboratory is given in Table 8.6.

Table 8.6
Region wise Allocation of Resources for Soil Testing Laboratory

Region	Allocation (Rs. crore)
1	2
Marathwada	40
Vidarbha	55
ROM	70
State	165

Source : Provided by the subgroup on Agriculture

8.17.18 Forestry

The recorded forest area of the state is 61,939 km² which is 20.1% of the geographical area. The forest cover in the state based on the interpretation of satellite data of October-December, 2008 is 50,646 km² which is 16.5% of the state's geographical area (India State of Forest report, 2011). As compared to the norm of about 33% forest cover (the norm depends upon the topography and physiography of the region), this is clearly a gross shortage from the environmental point of view. Region wise Konkan has 41.2%, Western Maharashtra 7.9%, Marathwada 3.0% and Vidarbha 27.7% forest cover. Districts having forest cover more than 30% of the geographical area are Gadchiroli (70.0%), Ratnagiri (51.2%), Sindudurg (49.3%), Raigad (40.0%), Chandrapur (35.6%), Gondia (35.1%) and Thane (30.5%). Districts with <10% forest cover are Akola, Buldhana and Washim districts in Vidarbha while entire Marathwada districts have less than 10% forest cover with alarmingly 6 districts falling under <5% forest cover. Western Maharashtra has 4 districts with <5% forest cover. State level comparison with previous assessment (Oct-Dec, 2006) shows a loss of 4 km² of forest cover.

In forest policy, laws for conservation, protection and overall management of resources have been the important aspects of government initiatives. Maharashtra Forest Policy, 2008 has focused on formulation of district wise plan for achieving 33% forest cover in the state. The minimum of 15% green (tree) cover against the total geographical area is the norm for green city. Scientific management, social forestry, farm forestry, agro-forestry, community forestry, urban forestry, afforestation of wasteland land, reduction in use of timber etc. are the already identified initiatives which henceforth need to be effectively implemented relating to the regional scenario to achieve the forest cover norm and maintain the environmental balance.

Significant role of forests in carbon storage and sequestration brought them to the centre-stage of climate change mitigation strategies increasing the importance of regions with

greater forest coverage. To encourage conservation and expansion of forests world-wide, India internationally supported compensation for nations in return for the carbon services they are, and will be, providing by conserving, stabilizing and/or increasing their forest cover. The policy approach advocated by India in the context of the agenda item of “Reducing emissions from deforestation in developing countries” of the United Nations Framework Convention on Climate Change (UNFCCC), also known as REDD or REDD-plus was named “compensated conservation” (Kishwan, 2007). However, this would require assessment and monitoring of forest carbon stocks of a region at regular intervals. On similar lines special regional allocation can be initiated to those regions in the state with greater forest coverage.

(Kishwan, J. 2007. Reducing emission from deforestation in developing countries: Indian proposal. Presented at 2nd UNFCCC Workshop on REDD: 7–9 March 2007, Cairns, (Australia). (http://unfccc.int/files/methods_and_science/lulucf/application/pdf/070307kishwan.pdf))

8.17.19 Agro-Forestry Department for Marathwada and Western Vidarbha

Forest cover in Marathwada is lowest 3.5% forest area. ROM has 15.8% forest area, whereas Vidarbha has 27.7% forest cover. For maintaining eco-balance minimum 33% forest cover is essential, however, all the regions have much less than mandatory requirement. Although Vidarbha forest cover appears higher, western Vidarbha districts have only 3-5% forest cover. In Vidarbha, Konkan, Western Maharashtra reduction in forest cover was observed during last decade. Although Forest department controls 21% of cultivable area, average forest area in the state is 17%. This shows that forest department lands are without effective forest cover. Regional imbalance in forest coverage is visible and Marathwada and other districts of western Vidarbha with low forest coverage needs an emphasis on agro-forestry program where forest can be grown in combination with crops.

Marathwada, Western Vidarbha and Western Maharashtra have a very poor forest cover and promotion of agro-forestry appears to be the only solution in these regions. Agro-forestry research has suggested several viable options of compatible tree-crop combinations. Location specific promotion of tree species along with crop and their geometry will ensure adequate tree cover in low forest areas like Marathwada and Western Vidarbha and parts of Western Maharashtra. Generation and regeneration of conventional forest seems unviable in these regions. Hence, it would be advisable to set up separate agro-forestry department for these regions. Therefore, planting of trees on border lines and growing compatible tree crop combination as per recommendations of agro-forestry research program should be promoted in these regions. *Marathwada and Western Vidarbha and some districts of Western Maharashtra should have a department of Agro-forestry for improving forest cover without affecting crops. The allocation of funds for Agro-forestry department in three regions is given in Table 8.7.*

Table 8.7
Status of Forest in Maharashtra

Region	Geographic area (sq km)	Total Forest (sq km)	% of GA	Allocation for agro-forestry promotion to reach 10% target in 10 years
1	2	3	4	5
Vidarbha	97404	26990	27.71	10*
Marathwada	64813	1923	2.97	10
ROM	145496	21733	14.94	5
Total	307713	50646	16.46	25

Source: India State of Forest Report 2011

* Western Vidarbha

8.18 General Recommendations

In addition to discussion and recommendations made earlier in this chapter, the committee felt that the data mining was not so easy task primarily due non existence of any devoted agency to collect and store data. The routine departmental data bank was inadequate and often incorrect. The committee strongly recommends an independent agency to collect and maintain data bank on Agriculture, Animal husbandry, dairy, fishery, forestry and other aspects of agriculture.

8.18.1 Maharashtra Agriculture Statistical Agency (MASA)

MASA, an independent agency under the department of Agriculture, Animal husbandry and Fishery is recommended with adequate staffing structure for collection and maintenance of data bank on agriculture and allied subjects. The agency will have great advantage of database on various aspects essential for agricultural planning and development strategies of the state.

8.18.2 Maharashtra Land Lease Act (MLLA)

Land Tenancy Act in force in the state was relevant when it was enacted and it has played its role of giving ownership of land to tiller. Now fragmented pieces of land are non operable and often left untillied due to constraints of scale. It is high time to abolish 'Tenancy Act' and enact new 'Maharashtra Land Lease Act' to allow farmers to lease the land for cultivation to another farmer for a period of time on agreed terms and conditions, in this case ownership of land retained and owner gets returns from lease agreement.

8.18.3 Averting Farmers' Suicide in Vidarbha

Farming was one of the top ranking profession and farmers were proud to be in farming. However, during last decade (1999-2009) Western Vidarbha found spurt in farmer's suicide cases. Studies indicated that the major causes of suicide were indebtedness due to fall in productivity and inability to repay debt, introvert tendency amongst small and medium scale farmers, Continuous low rainfall for consistent 5 years, reducing productivity, lack of access to irrigation leading to predominantly rain-fed farming are areas to be intervened for suicide proof farming. Region has already received attention of Central and State Government by

allocation of packages in suicide prone region of six districts. Speedy completion of irrigation projects, adoption of dry-land technology, introduction of new agriculture initiatives, improving access to credit and inputs, popularization of Integrated farming systems model, incentives for agro-based industry, supportive infrastructure like roads, transport, communication, storages, markets etc are some of the major initiatives suggested for long term sustainable suicide proof farming in Vidarbha.

8.18.4 Agriculture Growth Story of Neighbouring States

Agriculture growth stabilized with standard deviation in growth rate reduced from 53% to 11%. Thrust on agriculture extension, horticulture, strategy for increasing productivity of major five crops (cotton, groundnut, castor, mango, date palm) and introduction of new thrust cash crops of cumin, fennel, isubgol, onion and potato have brought new growth story. Fruits and vegetables production doubled during XIth five year plan period due to thrust on horticulture.

The growth model includes 8-10 hr uninterrupted power supply, Creation of six lakh water harvesting structures, Success of Bt Cotton, APMC reforms, Market road network, High tech horticulture, Precision farming, Fodder, co-operative dairy with 98 lakh metric ton milk production and Krishi Mahotsav as extension strategy. Soil and water were central thrust areas in conjunction with inputs like seed, fertilizer, mechanization and pesticide.

Governance initiatives for unbundling delivery system with delegation of powers to local official and monitoring, rationalization of all finance schemes including central Government schemes and dynamic 'krishimahotsav' for one month covering each village helped in mass contact with converging large number of schemes into few focus programs on knowledge, new seed and machinery, productivity raising, Water awareness, drip irrigation etc played positive role in enhancing growth of agriculture. Agriculture output value increased by 58% during XIth five year plan period.

8.18.5 Regional Investments Proposed

The estimates in below (Table 8.8) relate to total additional capital formation needed to attain higher growth path. The estimates below should be construed as budgetary support and/or subsidy. Share of private and public contributions to these investment expenditures will vary as per the design of the program and farmers' participation.

Table 8.8
Region wise Investments for Next 5/10 Years for Enhancing Agricultural Growth

(Rs. in crore)

Development items	Vidarbha	Marathwada	Rest of the Maharashtra	Total**	Annual budget (years)*
1	2	3	4	5	6
Protective Irrigation (Farm Ponds + Pumps+ micro-irrigation sets)	25,485	10,852	8,324	44,661	4,466 (ten)
Micro-irrigation (Drip and Sprinkler)	916	2,505	4,440	7,861	1,572 (Five)
Horticulture Mission	750	625	–	1,375	275 (Five)
Cotton Mission	100	100	–	200	40 (Five)
Paddy Mission	100	-	-	100	20 (Five)
Dryland Agriculture Development Mission (DADM)	500	500	250	1,250	250 (Five)
High tech horticulture	2,500	2,500	1,250	6,250	1,250 (Five)
Agri-Commodity Parks	780	660	1020	2460	492 (Five)
Maharashtra Agri. Mechanization Mission (MAMM)	2,873	2,813	-200	5,886	1,176 (Five)
Taluka seed farms	12	8	16	36	18 (Two)
Vocational Agriculture Training Institute (VATI)	100	100	100	300	60 (Five)
Farm Women Training Institute (FWTI)	100	100	200	400	80 (Five)
Eastern Vidarbha Krishi Vidyapeeth, Gadchiroli	200	–	–	200	40 (Five)
Maharashtra Council of Agricultural Research (MCAR)	150	150	200	500	100 (Five)
Strengthening of Agril Universities	100	100	100 (Konkan)	300	60 (Five)
Soil Test Labs	55	40	70	165	33 (Five)
Forestry/Agro-forestry	10	10	5	25	5 (Five)
Fodder and Livestock Improvement Mission (FLIM)	15	10	–	25	5 (Five)
District Extension Services Unit (DESU) @ Rs 50 Crore each	550	400	700	1650	330 (Five)
Total (Round off)	46,534	26,611	29,287	73,644	10,272

*Annual budget distribution for number of years (2/5/10).

**71% of total additional investment necessary is for water (protective micro-irrigation)

Source : Provided by the subgroup on Agriculture

8.19 Policy Initiatives and Reforms: Summary

1. We recommend Regional Watershed Mission for Vidarbha, Marathwada and Rest of Maharashtra. The watershed mission should strive to complete the execution of program in next five years.
2. Dry-land Agriculture Development Mission in convergence with watershed mission is recommended for increasing productivity of dry-lands within next 10 years.

3. Cotton, pigeon pea, soybean, chickpea and paddy are major rain-fed crops in all regions specially Vidarbha and Marathwada. It is necessary to raise the productivity and double it in coming 5 to 7 years. To achieve this level of productivity these crop would need protective irrigation. Immediate steps need to be taken to establish such system of 'Protective irrigations' for these crops.
4. Establishment of Cotton mission for Vidarbha and Marathwada and Paddy Mission for eastern Vidarbha
5. Regional Horticulture Mission for Vidarbha and Marathwada is recommended for next five years to develop horticulture in these backward regions.
6. Fodder and Livestock Improvement Mission in Vidarbha and Marathwada for next 5 years is recommended to stabilize livestock and dairy in the region for overall growth.
7. Ongoing irrigation projects in Vidarbha and Marathwada need priority attention for completion in a stipulated time period.
8. **The New Command Area Development Authority (N-CADA)** that we have proposed should have inter-disciplinary approach, structure and manpower to achieve socio-economic development of command area. The functions of Water control, release, utilization, crop planning and water use efficiency and maintenance of canals must be transferred to new N-CADA.
9. We recommend a mandatory shift in favour of micro Irrigation technologies for high water consuming crops like sugarcane, banana, other fruits and vegetables with appropriate incentives for increasing water use efficiency.
10. Hi-tech Horticulture is capital intensive and needs to be gradually promoted to cover at least 25,000 ha area during next 10 years.
11. We have recommended various intervention and policy initiatives that need to be implemented in 'mission mode approach'. Such an approach would require increase in the manpower required by the agriculture and water resource departments. Both of these departments should seriously consider the enhancement of their existing manpower and human resources. In particular, extension services in the lagging regions need to be improved on urgent basis.
12. **‘Maharashtra Agro-engineering Company’** should be created by converging and merging budget of all schemes and departments for implementation of Micro-irrigation and Mechanization programs. The company shall be headed by professional agricultural engineers and support team for scientific execution of the program.
13. **Drought Prone Area:** There are large tracts of drought prone area that are spread across the regions. Population of these regions suffer from great hardships and perpetual struggle for survival. Special budgetary provision should be made for these regions and regional allocations should be proportional to drought prone area in the respective region. Watersheds, Water lifting systems for drinking and protective irrigation are priority programs for these areas. Long term contracts for fishery tanks (minimum 5 years) is desirable for attracting sustainable private investments in this sector. Attract private investments in fish hatchery and incentives for mechanization in deep sea fishing are desirable initiatives.

14. New Agricultural University for Eastern Vidarbha located at Gadchiroli/Sindewahi is recommended for growth of the Eastern Vidarbha region having entirely different agro-climatic situation.
15. It is also essential to have one agriculture college for each taluka and one agriculture polytechnic in a cluster of villages with one lakh population to meet the human resource need of new agriculture.
16. Vocational Agriculture Training Institute (VATI) for each region attached to State Agricultural Universities are recommended to meet human resource demand of new agriculture which will need very specialized skills in operation, management, repair & maintenance, seeds, nursery, plant protection, post harvest and processes, livestock management, poultry, dairy, other enterprises with location specific vocational training ranging from 4 weeks to 2 years duration.
17. Establishment of Farm Women Training Institute (FWTI) for each region.
18. We recommend establishment of **Maharashtra Council of Agricultural Research (MCAR)** on the line of Indian Council of Agricultural Research (ICAR) for promoting research in the state with initial grant of Rs 500 crore, located at Aurangabad. This Council should be focused on supporting research on New Agriculture components and systems. Maharashtra Council for Agricultural Education and Research (MCAER) which is coordination agency for agricultural universities shall be merged in MCAR with new Governing system and mandate.
19. Each existing agricultural University shall be provided special development grant of Rs. 100 crore for creation of state of-the-art infrastructure for research and education.
20. **District Extension Services Units (DESU)** at each district head quarters be created for providing specialized extension services to meet needs of new agriculture. About **Rs 50 crore** of budget per district shall be earmarked for DESU activities.
21. Each district must have Agro-based industry/services/Agri-commodity park as proposed in Table 8.8 with total investible resources of Rs. 2,460 crore.
22. Four regional Agro-industries Development Corporations (Vidarbha, Marathwada, Western Maharashtra and Konkan) be created for emphasis on development of Agro-industries in the region replacing MAIDC in present form.
23. Institute of Agricultural Mechanization (IAM) attached to each state Agricultural University and Regional Agricultural Mechanization Missions under the umbrella of Maharashtra Agricultural Mechanization Mission shall be established with total investible resources requirement of Rs. 5,886 crore for R&D, testing, training and demonstration of farm tools and equipments suitable for the region.
24. Custom hiring centres for farm implements shall be promoted in cluster of villages with exemption of taxes and 30 to 50% cost incentives for new service provider enterprise on individual basis, group and cooperatives.
25. APMC act shall be suitably amended and strictly implemented to check the commodity losses, to ensure fair dealing by commission agents and ensuring remunerative prices to farmers. All APMC transactions must be computerized and online payment on same day shall be ensured.

26. Making insurance instruments farmer friendly, compulsory insurance of crops and animals, premium subsidy are some of the policy initiatives that will facilitate the social security of farmers.
27. Credit to the extent of 75% of cost of cultivation shall be made available in all regions to meet minimum demand for timely purchase of inputs and make farming as viable enterprise,
28. Development of customized fertilizer grades coupled with enhanced use of organic sources of nutrients requires major policy initiatives for promoting organic inputs and revisiting fertilizer subsidy issues, however, present gap in demand and supply needs to be bridged by evolving mechanism for timely and quality supply of fertilizer at doorstep of farmers.
29. Taluka seed farms shall be revitalized to fulfill local demand for quality seeds.
30. MGNAREGA should be exclusively implemented for agriculture operations during cropping season and other times the work related to farm roads, soil conservation work and water harvesting structure shall be given priority.
31. Based on regional strengths, new agriculture activities like Group farming, Contract farming, High-tech farming, Organic farming, Precision farming, Conservation farming, Integrated farming system model, Agri-tourism, Diversified farming, Tribal agriculture, Solar farming etc shall be promoted by providing regional incentives to increase income and generate local employment.
32. Soil test laboratory in each Taluka shall be established for providing soil health services and advisory to the farmers.
33. Forest cover in the state is 16.46% of the state's geographical area (Indian Forest Report, 2011) which is about half of the required norms of 33%. 'Agro-forestry department' in Marathwada, Western Vidarbha and Western Maharashtra has potential to increase tree cover in these regions for environmental stability.
34. Considering the cropping pattern in different regions of Maharashtra, the water requirement of crops is 1,97,957 Mm³ (million cu. Meter) which can be reduced to 51% by adoption of micro-irrigation. Water resources development as per regional potential shall be explored. Watersheds, Minor irrigation, Medium irrigation projects have benefit of dispersion to large areas and masses, hence shall be prioritized over large projects.
35. There is need to revisit regional water use by providing proportionate share of water to deficit area. Efficient use of surface water, ground water, inter basin transfers to deficit area, recycling of municipal sewage water and industry water are some of the policy measures essential for water budget planning.

8.20 Some General Recommendations and Observations

8.20.1 Agro-Services Provider Groups (ASPG)

Migration of traditional agriculture labor force to other sectors and Rural Employment Guarantee scheme diverted agriculture work force which has created vacuum that needs to be filled by providing mechanized services to farmers. Promotion of ASPG through incentives

for purchase of need based tools/implements/machines to group of youth at village level will have great self employment potential by providing services to farmers in operations like tillage, spraying, harvesting, cleaning, grading, packaging, transport, market information, e-services, insurance, finance and many more.

8.20.2 Agriculture Market, Prices and Insurance

Cotton, soybean, pigeonpea and chickpea are major commodities of rain-fed region especially Western Vidarbha, Marathwada and rain-fed zones of Western Maharashtra. The price volatility of cotton and other crops is the prime source of uncertainty of incomes of the farmers and is largely responsible for creating distress situation in these regions. Prices of fruits, vegetables and other commodities are driven by market forces of demand-supply. The State government should encourage group marketing efforts of the farmers and remove the restrictions on marketing by themselves. To encourage participation of farmers in futures market, the state government can strengthen warehouse receipt based bank credit and partial guarantee for the hypothecated produce.

There is need for supportive policy initiative to safeguard interests of farmers from fluctuating prices of these commodities APMC should effectively check commodity losses and ensure fair dealing by commission agents. All APMC transactions must be computerized and online payment on same day shall be ensured. APMC in neighbouring state have successfully computerized operations and on-line monitoring of movement of commodities enabling quick payments, minimizing losses and providing state of the art supportive infrastructure.

8.20.3 Market Intelligence Agency

This is essential for decision making on when to sale. Market intelligence agency may be established in each region to advice farmers about market trends and sale of produce.

8.20.4 Storages for Grain and Cool Chain

Distribution of grain storages in Maharashtra indicate 52% godowns with 51% of total capacity are concentrated in ROM for 15 districts whereas Marathwada and Vidarbha has only 48% godowns with 48% capacity for 19 districts. There is a need to strengthen network of godowns in Marathwada and Vidarbha enhancing storage capacity. Cold storage chain is essential for storage of fruits and vegetables.

8.20.5 Insurance

Rain-fed agriculture dominant in Vidarbha, Marathwada and drought prone areas of all the regions are risk prone due to weather aberrations causing biotic and abiotic stress conditions. There is no security mechanism against the risk prone agriculture. There is need to create appropriate risk proofing instruments to provide social security to farmers to provide protection against losses due to natural calamities. Insurance schemes launched for crops, weather, animal etc are not yet known to score of farmers and not so friendly.

8.21 Risk Proofing Instruments

Making insurance instruments farmer friendly, compulsory insurance of crops and animals, premium subsidy are some of the policy initiatives that will facilitate the social security for farmers. This will reduce the demand for compensation against losses due to calamities.

8.22 Fertilizers and Fertilizer use

Fertilizer is an important input in intensive agriculture and region wise fertilizer requirement and availability shows a large gap. This affects seriously the productivity of crops. MAIDC may be given mandate to produce fertilizer grades to bridge the gap. There is a tendency to use excessive doses of fertilizers with low use efficiency. Increasing cost of fertilizer and poor use efficiency added to the cost of production without much change in market prices of commodities thereby incurring losses. Therefore, there is a need to revisit entire gamut of nutrient management by gradually moving to development of customized fertilizer grades coupled with enhanced use of organic sources of nutrients. *Agriculture research on development of customized fertilizer grades for different crop requirement will provide technology for balanced nutrition. Shifting emphasis from chemical agriculture to organic agriculture requires major policy initiatives for promoting organic inputs and revisiting fertilizer subsidy issues.*

Minimizing use of chemical pesticides and gradually shifting towards bio-pesticides and bio-control measures for integrated pest management requires major initiative in production of quality bio-products. Investments in local entrepreneurship skills and credit support will pave the way for local availability of bio-control and bio-pesticide products facilitating the adoption.

8.23 MGNAREGA for Farm Roads and Structures

During peak cropping season MGNAREGA must be exclusively implemented for agriculture operations and other times the work related to farm roads, soil conservation work and water harvesting structure shall be given priority.

8.24 Group Farming

Continuous fragmentation of land holdings with annual rate of increase in holdings below 2 ha is 16.5% in Konkan, 19.2% in western Maharashtra, 15.4% in Marathwada and 15.2% in Vidarbha. The holdings are gradually tending towards non-operational. Therefore, there is a need to encourage collective or group farming. Group farming involves collective operations, collective decisions in cropping pattern and marketing involving group of farmers. There are some voluntary initiatives by farmers however; the concept requires strong policy support and incentives for group farming to facilitate profitability of small farmers.



CHAPTER 9

Spreading the Industrialization

9.0 Introduction

Maharashtra, a leading State of the Indian Union, has been widely known as the 'Economic and Industrial Powerhouse' of the country. Primarily because of the presence of Mumbai – the commercial and financial capital of India and due to significant progress of industrialization in the Thane-Pune regions, Maharashtra has always been one of the topmost destinations for domestic as well as foreign investment and for the large and small industries alike. The 150-year old tradition of private enterprise, reasonably good infrastructure, forward-looking leadership and administration of initial formative years, competitive work-culture etc. were some of the prominent factors which have made Maharashtra a leading investment destination and a home to many Fortune 500 Companies and other MNCs.

Traditionally, Maharashtra's industrial strengths have been in sectors like – *engineering & automotive, chemicals, food processing and textiles*. After last two decades, the State's industrial base stands significantly diversified, with the addition of sectors like – *pharmaceuticals, bio-tech & life sciences, IT & ITES, BPO, tourism & hospitality, retail, banking-finance-Insurance, Media and entertainment etc.* – called the modern and/or knowledge-based sectors.

The Micro-Small-Medium Enterprises (MSMEs) have been the backbone of the State's industrial economy, contributing immensely to investment, growth, employment as well as to exports. The export-sectors such as gems and jewelry, ready-made garments, traditional processed food, and IT and financial services in the recent years have also added significantly to State's overall growth and wealth.

However, the last two decades have brought about sea-change in the industrialization- process of domestic deregulation and opening up of the Indian economy especially in Maharashtra and indeed in all the States. **'Private Investment' as against 'State Patronage' has become the principal driver** of the recent pattern of industrialization everywhere. Consequently, all States are currently engaged in an intense competition amongst themselves, to attract and *retain* investment – domestic or foreign, large or small. Yet another game changer has been the emergence of dynamic service sector with ever changing composition of the leading services. Here information as well as communication technology revolution has opened up new potential for growth and employment.

9.1 Promoting Industries in Lagging Regions

The progress in industrialization has been uneven in the State of Maharashtra with Rest of Maharashtra leading in growth performance. During the recent period 2001 to 2011 while the State industrial growth rate was 9.8% per annum, that of Rest of Maharashtra was 10.9% per annum, for Vidharbha and Marathwada it was 8.5% per annum and 8.1% per annum respectively. This growth differential has been the major reason for aggravating regional imbalance in the State, which needs to be rectified.

Of course, the Government of Maharashtra has a policy for promoting industries in backward districts and towards this, for last several decades - including the recent years of 'liberalization', the State Government's approach has been essentially, through fiscal incentives and concessions, to attract investment and spreading industrialization to backward districts. There have been periodic modifications in this policy but without altering the 'basic' principle.

The 2006 Policy for promoting mega projects and the latest Maharashtra Industrial Policy 2013 were essentially centered around similar approach of fiscal concessions. The experiences so far indicate inadequacy of this approach and there is a need to think afresh to promote the industrial development of the lagging regions. The thrust has to be on increasing supply of skilled manpower, making available the state-of-the-art infrastructure, nurturing entrepreneurship, reducing cost of doing business, and thus exploiting comparative advantage and local resources.

9.1.1 Industrial Imbalance

The primary determinant for industrial growth has been the inflow level of private investment and these have been uneven amongst the regions as pointed out in the following section.

As per the latest data of IEM (Industrial Entrepreneurs Memorandum - 2012), during the last decade, the four districts Pune, Raigad, Ratnagiri and Thane account for more than 50% investments in Maharashtra and three divisions i.e. Pune, Konkan and Nashik account for more than 80% of entire investment. In other words, in spite of fiscal incentives, the private investment flows are heavily concentrated in the three divisions viz; Konkan, Pune and Nashik while divisions like Aurangabad, Nagpur and Amravati have received minuscule investment.

The picture is no different for “mega projects”. As on 31st December 2012, out of 114 such units 90 are located in Pune, Nagpur & Nashik cities and the employment is even more geographically concentrated. Out of 350 mega projects sanctioned so far, 85% are in Konkan region and cities like Pune and Nagpur and 60% employment generation is in the four districts of Pune, Thane, Kolhapur part of Nagpur.

In the MSME (Micro, Small and Medium Enterprises) 50% of all units are located in five districts of Nashik, Kolhapur Aurangabad, Pune and Thane. Out of the investment of Rs. 16,000 crores in MSME plant and machinery 75% are in the four districts viz; Mumbai, Thane, Pune and Aurangabad and 2/3rd of the total employment of two million is in six districts of Maharashtra viz; Mumbai, Thane, Pune, Nashik, Nagpur and Aurangabad.

Within the State of Maharashtra, a lot of 'churning' of industrial activity has taken place in several districts and regions. Taking a 5-decade perspective, today, one can clearly see the emergence of industries beyond the Mumbai-Thane-Pune belt. Many new industrial centers have emerged steadily, such as – Nashik, Kolhapur, Nagpur, Aurangabad, Ratnagiri etc. due to the emergence of the supporting factors mentioned above. However, barring these few growth centers, the situation has not changed much in terms of either the inter district and inter-regional imbalance.

9.1.2 Maharashtra Industrial Development Corporation (MIDC)

For a planned industrial development in the state, the role of MIDC is of great importance. MIDC provides all the necessary facilities like- roads, water, electricity etc. to the entrepreneurs

operating within the jurisdiction of MIDC industrial areas. The progress of the MIDC up to 31st March 2010 is shown in Table 9.1

Table 9.1
Industrial Units, Investment and Employment

S.No	Region	Industrial Units		Investments		Employment	
		No	Percentage	Amount (Rs. Cr.)	Percentage	No (lakh)	Percentage
1	2	3	4	5	6	7	8
1	Rest of Maharashtra	24786	74.3	40112	74.6	7.37	83.8
2	Marathwada	4479	13.4	4303	8.0	0.53	6.0
3	Vidarbha	4090	12.3	9377	17.4	0.90	10.2
4	State	33355	100.0	53792	100.0	8.80	100.0

Source – Economic Survey of Maharashtra, 2011-12

Table 9.1 shows the progress made by the MIDC, in the three regions of the State, up to 31st March 2010. The total number of industrial units set-up in the MIDC industrial area was 33355 of which 74.3% are located in the RoM region while the proportions of industrial units set-up in Marathwada and Vidarbha were 13.4 %and 12.3% respectively.

The total amount of investment made in these industrial units was Rs.53792 corers. Of these total investments, the shares of the three regions, were as follows: RoM (74.6%) Marathwada (8.0%) and Vidarbha (17.4%). As regards employment created in these industrial units, it was found that of the total employment created (8.80 Lakhs), the maximum employment (83.8%) was created in RoM region. The shares of Marathwada and Vidarbha were 6% and 10.2% respectively.

9.1.3 Cooperative Industrial Estates

To increase the employment opportunities in the state, the establishment of the cooperative industrial estates has played an important role. The progress of the cooperative industrial estates as of Oct - Nov. 2010, is shown in the Table 9.2

Table 9.2
Progress of Co-operative Industrial Estates

Sr. No.	Region	Registered		Actual working		Working units		Employment	
		No	Percentage	No	Percentage	No	Percentage	No	Percentage
1	2	3	4	5	6	7	8	9	10
1	Rest of Maharashtra	96	67.6	81	80.2	6174	88.1	115617	93.3
2	Marathwada	26	18.3	13	12.9	455	6.5	4460	3.6
3	Vidarbha	20	14.1	7	6.9	380	5.4	3790	3.1
4	State	142	100.0	101	100.0	7009	100.0	123867	100.0

Source – Economic Survey of Maharashtra, 2011-12

Table 9.2 indicates that, of the total no. of registered industrial estates, 67.6% are located in the Rest of Maharashtra region, while in Marathwada and Vidarbha, these proportions are 18.3 % and 14.1% respectively, indicating a very weak position of cooperative industrial estates in the lagging regions of the State.

About the number of actual working units in these industrial estates, majority of them is observed to be in the RoM region (80.2%). In Marathwada and Vidarbha regions, the share of working units has fallen sharply to 12.9% and 6.9% respectively. The distribution employment created by these cooperative industrial enterprises across the regions were found to be 93.3% for RoM, 3.6% for Marathwada and 3.1% for Vidarbha.

9.1.4 Regional Spread of SEZ

The Government of Maharashtra has adopted the policy relating to the Special Economic Zones (SEZ), from 10th February 2006. This policy is expected to bring about faster economic development of the State. Table 9.3 shows the information relating to 143 SEZs in the State as on 31st December 2010.

Table 9.3
Regional Spread of SEZs (2010)

S.No.	Region	Sanction No	Notified No	Proposed Sanction Investment	Investments Notified (Rs.Cr.)	Proposed Sanction Employment	Employment Notified (in lakh)
1	2	3	4	5	6	7	8
1	Rest of Maharashtra	121 (84.6)	48 (76.2)	173538 (91.8)	68415 (88.7)	56.18 (88.4)	16.17 (77.7)
2	Marathwada	12 (8.4)	7 (11.1)	3855 (2.2)	1775 (2.3)	1.52 (2.4)	0.31 (1.5)
3	Vidarbha	10 (7.0)	8 (12.7)	11594 (6.0)	6948 (9.0)	5.86 (9.2)	4.32 (20.8)
Total State		143 (100)	63 (100)	188987 (100)	77138 (100)	63.56 (100)	20.80 (100)

Source Economic Survey of Maharashtra 2010-11, GOM, Mumbai : p.106. Note: Figures in bracket indicates percentage to total

It is obvious from the above Table 9.3 that of the 143 sanctioned SEZ proposals, 84.6% are located in RoM region, while in Marathwada and Vidarbha these proportions are merely 8.4% and 7.0% respectively. Similarly, of the notified SEZs, 76.2% are from RoM, while, the shares of Marathwada and Vidarbha region are 11.1% and 12.7% respectively. Regarding the amount of investment made under SEZ projects (sanctioned), 88.7% investment is made in RoM region, while in Marathwada and Vidarbha the proportions of investment are only 2.3% and 9.0% respectively. Similarly, the region wise employment created in these SEZ are 77.7% for RoM, 1.5% for Maratwada and 20.8% for Vidarbha

9.2 Impact of Incentives on Shares of Industrial Output

In the earlier sections, we have discussed the policy initiative provided by the Government of Maharashtra, under its Industrial Policy of 2006-2011. To encourage industrial activities in backward

areas and low HDI districts like Hingoli and Gadchiroli, these areas were classified into A, B, C, D, D+ and No-industry districts. This policy was in operation in the State during the period 2006 to 2011.

Table 9.4
Region wise Changes in Proportion of Industrial Output: (2001-02 and 2008-09)

Region	Registered Manufacturing (%)	Un-registered Manufacturing (%)	Total (%)
1	2	3	4
ROM			
2001-02	87.6	79.3	85.2
2008-09	84.4	79.2	83.1
Marathwada			
2001-02	6.2	7.1	6.5
2008-09	6.5	7.4	6.7
Vidarbha			
2001-02	6.2	13.6	8.3
2008-09	9.1	13.4	10.2

Source : Provided by the Industry and Infrastructure group formed by the committee

1. **RoM** The impact of various incentives on the industrial output is shown in Table 9.4 The proportion of industrial output in ROM region, in registered manufacturing has declined significantly between 2001-02 and 2008-09, from 87.56% to 84.44%. Similarly in un-registered manufacturing also there is a marginal decline from 79.27% to 79.14% during the same period. The combined impact of both, registered and un-registered manufacturing was found to be 85.20% and 83.08% during this period.
2. **Marathwada** Marathwada region is considered industrially backward. Between 2001-02 and 2008-09, the impact of incentives has been quite marginal on this region. Under registered manufacturing the proportion of output in this region has increased from 6.23% to 6.51% during this period which is quite insignificant. As regards, output in un-registered manufacturing, the proportion has increased from 7.06% to 7.42% during the same period. The combined impact of both registered and un-registered manufacturing output is also very meager, i.e. it increased from 6.47% to 6.74% during this period.
3. **Vidarbha** Vidarbha region is also considered to be industrially backward (except Nagpur). In this region, the proportion of industrial output in registered manufacturing, increased significantly from 6.21% in 2001-02 to 9.05% in 2008-09. As regards un-registered manufacturing there is a small decline from 13.67% to 13.43% during this period. Finally, the combined effect of both registered and un-registered manufacturing was significant, i.e. it increased from 8.34% in 2001-02 to 10.17% in 2008-09. However, it has not contributed in reducing regional disparities in industrial sector.

The data above indicates that, there is heavy concentration of industrial activity in Rest of Maharashtra region, both in registered as well as un-registered manufacturing in the State.

- (a) The impact of various incentives on improvement in industrial output has been quite positive in Vidarbha region.
- (b) In Marathwada region, although the impact is positive during this period; is quite insignificant; special efforts are needed to improve the industrial progress of this region.
- (c) The proportion of industrial output in RoM region has, no doubt, declined but that indicates that, other two regions have improved their relative positions, during this period.

9.2.1 Private Industrial Investment Across the State

Some stark facts stand out from the available evidence and data –

- 1. Despite innumerable incentives over many years, private investment even today, remains stubbornly concentrated in a handful of districts and/or only in half of the six administrative divisions–Konkan-Pune-Nashik. It implies that only a fraction of aggregate industrial investment has so far been made in – Aurangabad, Nagpur and Amravati regions.
- 2. Even within the three relatively advanced revenue divisions, the inter-district disparities are quite glaring.
- 3. If we exclude the specific districts of Aurangabad and Nagpur from their respective divisions, the picture looks even more pathetic with almost insignificant industrial investment activity in all the remaining districts belonging to these three divisions.

9.2.1.1 We use the data on 4 Parameters –Industrial Entrepreneurs Memorandum, Mega-Projects, MSMEs (Manufacturing and Services) and Clusters. An attempt has also been made to examine the available evidence on district-wise pattern of investment and employment.

- 1. As per the latest IEM data, only 4 districts i.e. Pune, Raigad, Ratnagiri and Thane account for more than 50% of all the 'proposed and under-implementation' industrial investment in Maharashtra. If the data on investment is analyzed division wise, the concentration gets further accentuated, with three divisions namely Pune, Konkan and Nashik accounting for more than 80% of the entire investment.
- 2. As regards employment, the picture is not very different, with just 6 districts accounting for more than half of total employment envisaged to be generated via IEMs. These districts are – Pune, Thane, Nagpur, Raigad, Nashik and Kolhapur. Similarly, more than 70 % employment is concentrated in Konkan, Nashik and Pune Divisions.
- 3. The situation is similar as regards the distribution of 'Mega-Projects' as well as the distribution of 'SMEs' within the State. The highlights of districtwise distribution of MSMEs reveal that:
 - (a) Almost 50% of all the MSME manufacturing units are located in just 5 Districts namely Kolhapur, Aurangabad, Pune, Nashik and Thane.

- (b) Similarly, of the total MSME service enterprises, more than 50% are located in just 7 Districts of Nashik, Kolhapur, Mumbai, Thane, Nagpur, Pune and Aurangabad.
 - (c) As regards total investment in plant and machinery by the MSMEs, of about Rs.16,000 crores, almost Rs. 12,000 crores or 75% of MSME investment gets concentrated in just 4 districts namely Mumbai, Thane, Pune & Aurangabad.
 - (d) As regards Employment, of the over-2 million people employed in all MSMEs in Maharashtra, only 4 districts – Mumbai, Thane, Pune & Kolhapur account for more than 50% of employment, and adding Nagpur and Nashik, it is found that about 2/3rd of total MSMEs-employment is generated only in 6 districts of Maharashtra.
4. On MSME Clusters – regarded as the modern-day growth-vehicle for MSMEs, all the 11 clusters approved by GOI as on 01.01.13, are in the regions: Pune(4), Nagpur(4), Nashik(2) and Konkan(1) leaving Marathwada & Amravati divisions with virtually no approved cluster as yet.
- Also, 85% of the cluster-units are in just 2 divisions- Pune (50%) and Nashik (35%) – both together, generating 80% of total cluster-employment.
5. As regards Mega Projects, as on 31.12.2012, out of the 114 units gone into production, about 90 (or about 80%) are located in 3 divisions of Pune, Nagpur and Nashik having investment of Rs.61,300 crore. Out of these projects, Pune division alone accounts for more than 50%. Similarly about 70% of total employment generated by the Mega Projects is found only in 2 divisions of Pune and Nagpur.
- (a) The total mega projects sanctioned after July 2005, in Maharashtra, add up to about 350. As far as their district-wise composition is concerned, we find that:
 - (b) Of the 'proposed' aggregate investment of over Rs. 2,75,000 crores, about 60% of investment is 'concentrated' in just 6 Districts : Ratnagiri, Pune, Raigad, Gadchiroli, Chandrapur and Thane.
 - (c) Division – wise, more than 85% of investment of Mega – projects is in 3 divisions of Konkan, Pune and Nagpur – leaving the three remaining divisions of Nashik, Aurangabad and Amravati with less than 15% of total proposed investment.
 - (d) The picture is not very different, as regards employment: of the 3,20,000 employment estimated to be generated from these 350 Mega-projects, 60% employment is generated only in 4 districts: Kolhapur, Pune, Thane and Nagpur.

9.2.1.2 Some Findings

1. Looking at the data on IEMs and/or Mega-Project investment and /or MSMEs and/or Clusters, we find that leaving out Mumbai (which has dominance only in MSME-Service Enterprises), the only industrially active districts are - Pune, Thane, Nagpur – in terms of investment and Aurangabad, Nashik, Kolhapur are ahead in terms of employment.
2. As regards the 2 districts with high proposed Mega – Investment projects: Chandrapur and Gadchiroli, the actual status of the projects continues to remain unknown. Similarly, Ratnagiri and Raigad are the districts which are excessively driven by just a few Mega-Projects in Steel, Power etc.
3. There are a few districts like Satara, Sangli, Solapur, Jalgaon etc. and, to a certain extent, Jalna and Amravati, where the industrialization process has attained some momentum of its own.
4. However, in the remaining districts – belonging mainly to the regions of - north Maharashtra, Marathwada and Vidarbha, the industrial investment-growth-employment cycle is at a low scale.
5. While Marathwada, Amravati, Nagpur are clearly the divisions with relatively much less industrial activity, the situation gets further compounded by the fact that even within these divisions, only the district headquarters of Aurangabad, Amravati and Nagpur account for a very sizeable industrial activity in the respective regions / divisions, thus leaving the remaining 4/5 districts in each of these regions/divisions with absolutely minimal or insignificant industrial activity. Such pattern of concentration of industrial activity is bound to lead to regional imbalance in the industry sector .

9.3 Policy – Reforms

In the following sections we identify policy measures to achieve a better spread of industrialization amongst the regions of Maharashtra.

9.3.1 The policy reforms intended to reduce the excessive regional concentration of private investment, will have to address the 'state wide', 'region-specific', 'sector-specific', as well as 'enterprise' level issues. The design of the policy should evenly handle local specific needs and supportive infrastructure. In other words, 'One- cap – fits-all' approach would be counterproductive.

State level policies are principally related to investment climate reforms, key tax policy reforms such as GST, supportive infrastructure, and strengthening of development agencies such as MIDC, MAIC, DIC particularly at the regional level. These reforms have to be undertaken on high priority. Needless to say, these reforms will be far more beneficial to the relatively less industrialized regions. These are, illustratively discussed in the following paragraphs:

1. Infrastructure Development – Clearly, this is the topmost priority in the reform agenda,

especially for less-developed districts. Efficient rail and road network, presence of functioning airports, improved connectivity of the non-major ports with hinterlands together with uninterrupted supply of electricity at reasonable cost – will go a long way in improving the prospects of further industrialization. While Maharashtra has taken some steps in PPP in infrastructure execution, lot more needs to be done. Ensuring efficient and widespread broadband network is another priority area for infrastructure reforms.

The chapter on connectivity provides region wise details for the investment required in this sector.

2. ***Ease of Doing Business*** – Procedural rigidities and multiplicity of the various implementing public agencies still hamper and obstruct progress of industries – especially that of MSMEs – in the State. In this context, the latest 2013 Industrial Policy takes some laudable steps towards simplification of some procedures. However, we are still a long way off from a completely hassle-free business environment. “Genuine Single-Window Clearance”, should receive the highest priority.
3. ***Labour Reforms*** – Reforms of labour laws such as Chapter 5 A and B of Industrial Disputes Act, are required to offer more flexibility to employers, which will raise aggregate employment. With such an initiative, textile industry alone can offer significant growth of employment in Vidarbha, Marathwada and Khandesh. These gains can accrue within a short period.
4. The ***Fiscal Incentives*** in the form of concessions / deferrals/ waivers in stamp-duty, transparency in VAT refunds without delay – while necessary in genuine cases in some regions, need to be phased out in a time-bound manner, and, to begin with, at least need to be rationalized.
5. In order to overcome the comparative disadvantages, the underdeveloped regions can be strategically strengthened by extending cost competitive tax rebates and interest rebates across all the products produced in the region. Specifically a two percent rebate in Sales Tax and one percent reduction in interest rates on borrowed capital from banking sector will boost the manufacturing activity and can draw more and more private investments into the region. These two policy initiatives will go a long way in neutralizing the comparative cost disadvantages of Vidarbha vis a vis Mumbai – Pune – Nashik belt.
6. Expedient ***enactment of GST*** will go a long way in smoothening inter-state flow of investments and product/services.
7. ***Skill-Development*** – The growing chasm between educated and/or technically qualified youth and industry's job-needs, has to be bridged at the earliest with appropriate skill-development programs involving private sector participation.

9.3.2 MSME Sector Policy Reforms

Micro, Small and Medium industry (MSME) is a backbone of industrialization. The segment contributes 35% of value addition and 45% of employment. It will have a significant role in spreading industrialization in lagging region.

Cost effectiveness of Indian industry is due to low overheads of MSME and hence large / mega industrial segment is able to maintain its cost effectiveness by offloading the work to MSME segment.

MSME segment has major basic challenges such as:

1. Finance: MSME entrepreneurs face problems of both short term and long term finance because of fragmented capital markets. They also don't have easy access to venture capital. In China, there are Government Financial Institutions such as MSME Credit Guarantee Corporations. We recommend that Government of Maharashtra create such agency which can be either fully owned by the Government or can be in the form of joint venture with leading financial institutions. Such an agency will improve access to capital for MSME sector.
2. Human resource: Attracting skilled man power and managing talent is a challenging task as this sector has to compete with large enterprises including multinationals. This also leads to a greater burden on entrepreneur in terms of carrying out multiple tasks on his/her own. We have proposed in the Education Chapter, a special scheme for promoting skills in smaller towns of Vidarbha region. This will facilitate supply of skilled labour in MSME sector.

Further, MSME established in industrially backward region, has an additional challenge regarding easy access to customers. For all these reasons special attention and policies are essential for sustenance of MSME segment particularly in industrially backward regions. Reforms are necessary in the working of MIDC which should include transparency in MIDC procedures, and issues related to resolving the old package scheme of incentives etc. Further, decentralization of decision-making needs to be encouraged, by suitably empowering the District Industries Centres (DICs). This would mean that the entrepreneurs don't have to rush to Mumbai for decisions. In the light of this, we recommend that every division should have a Development Commissioner (Industries).

Many states have successfully followed a 'land-bank' model for smooth allocation and/or transfer of land for industrial projects. Maharashtra should evolve its own policy on land-banks. These initiatives are particularly significant for promoting industrialization in lagging regions.

9.3.3 Region Specific Policies

This section identifies region specific policies.

Vidarbha Region

It is possible to accelerate industrial growth in Vidharbha with new and innovative approaches which will leverage Vidarbha's intrinsic strengths such as abundant mineral resources and strategic logistic location .With fast track execution of MIHAN project, industrial activity in this region can be accelerated. Similarly, given its coal resources, by developing connectivity, the region would become a major producer of power and can become an electricity hub. Given its strong capabilities in production of cotton and horticulture products, specialized food and textile parks will give an impetus to agro based industrialization. Abundant forestry resource can provide the basis for promoting forest based industries particularly in tribal regions. Government

can take initiatives for attracting private investors to start industrial units like furniture, paper, handicrafts, sericulture etc. This will provide employment to local population and develop linkages. The growth of wild herbal plants can be put to good use by appropriate research and development for commercial production of herbal medicines.

9.3.3.1 Textile Industry in Vidarbha

1. Vidarbha has largest acreage under cotton cultivation and yet the poorest yield. This can only be corrected by giving encouragement to spinning and weaving mills along with well structured 'Contract Farming'.
2. Spinning and weaving mills are harbingers of knitting, dyeing, garments etc. Government of Maharashtra should encourage development of the SMEs in clusters strategically situated.
3. Power is one of the main inputs for spinning & weaving mills. Vidarbha is getting 26 new power plants and it is suggested that Government of Maharashtra should give power to these textile units at rates comparable to contiguous states of Vidarbha.

9.3.3.2 Revival of the Traditional Businesses of Vidarbha:

Traditional business of Vidarbha mainly comprises textile and metal ware (brass and copper) business and with the efforts of revolutionaries like Mahatma Gandhi and Vinoba Bhave Khadi, is also became popular amongst the masses. Khadi and metal related industry were progressing well in the region of Vidarbha, up to seventies. The readymade garments captured not only the major cities but also the smaller towns and the traditional metal ware was replaced by alternatives like steel, aluminum and plastic ware, requiring low maintenance cost with a guarantee of longer life. However, today both the industries are in doldrums. They certainly deserve a shot in the arm in the form of forward linkages. For cotton it could be yarn, fabric manufacturing and readymade wear to suit the demand of the modern generation. Metal (brass & copper) could be processed for making artifacts that shall occupy place of prominence in the domestic and commercial establishments. Instead of selling the resources (cotton & metal) in the raw form, value addition would certainly usher in greater margins vis-a-vis profitability, attract employment and ultimately result in overall prosperity of the ailing businesses.

MEDC had called for resource-based industrialization of the relatively less-developed districts of Vidarbha and Marathwada. The Vidarbha districts include – Washim, Gadchiroli and Chandrapur. The specific recommendations are presented below:

Washim - The district industry strategy must be centered on soyabean followed by cotton and must be drawn in tandem with that of Hingoli and Parbhani to ensure that scaling up to world class levels and to upstream and downstream products and services are viable. The strategy must include close hand holding of investment during

implementation, transparent and fair land acquisition, assured power and strengthening of rail road freight traffic access to major markets and to the NHDP (National Highways Development Projects) corridors. Washim must also emerge as a model in R&D and use of solar power in industry.

Gadchiroli - The unlocking of minerals has special significance for construction related industry, such as machinery and equipment, cement, steel products, glass, sanitary wares etc. Availability of minerals will make it possible to attract global investors to the district. In addition, today construction itself is acutely in need of quarries which are abundant in the region. Labour intensity of this sector will provide opportunity to the unskilled local workers. There is an urgent need to provide safety and security (being a sensitive area) to the investors for attracting them to establish their units near extraction activities.

Market Access- A major constraint faced by industrial units is absence of a local market and poor connectivity to major markets. The economy does not provide the necessary growth impetus and an expanding market scenario. To overcome this, a preference to local suppliers in Government contracts has been sought by the local entrepreneurs. A price purchase preference to local entrepreneurs for a limited period of 10 years should be considered seriously for all districts with low HDI subject to quality norms being met.

Marketing is also a major problem for tribals producing products from forest produce like honey lac and moha flower. These have potential for emerging as exotic personal beauty care products for the elite in metros. Special efforts will have to be made to create links between the tribal producers and elite outlets like Fabindia, Nyassa, and Eco Corner so that the products are closer to market needs and meet quality standards. A special brand initiative may be undertaken for the purpose, which provides publicity and other support to these products.

Industrial parks/ clusters: Industrial parks may be set up in the following areas in order to take them up the value chain through exposure to global brand needs. Common infrastructure facilities may be provided to these units for quality testing, packaging, waste disposal effluent treatment etc.

- (i) Food Park: Food Products and Food Processing
- (ii) Building Materials and Interiors: Furniture sanitary ware and Glassware
- (iii) Construction & Engineering: Steel Fabrication, Cement and Granite Tiles

There is utmost need to create railway freight corridors to Nagpur, Aurangabad, Hyderabad and Mumbai for providing a faster link to major markets. Providing an air link for small private aircrafts will propel industrialization in all districts of Maharashtra under a State led PPP initiative of MADC with private aircraft operators.

Many local Industry-representatives have called for –

- More industry-friendly approach by MIDC in its land-allotment;

- Fly-ash cluster, which will address local development as well as environment-pollution;
- Giving 'industry status' to logistics and tourism;
- Power to local industries at 'landed cost'.

9.3.3.3 Multi-modal International Cargo Hub and Airport at Nagpur (MIHAN) :

Opportunity for Vidarbha

MIHAN is one of the largest infrastructure projects that the Government of Maharashtra is pursuing in the State. It needs to be expedited and monitored on a regular basis. The infrastructure is almost ready, however the below mentioned areas need immediate attention.

1. Need for marketing MIHAN professionally in the manufacturing sector especially in SEZ. For this it is imperative to appoint a global agency to attract worldwide investors.
2. Create 'Free Trade Warehousing Zone' (FTWZ) in MIHAN
3. Speed up the process of finding a partner for developing the international airport, rail & road terminals.

9.3.3.4 Industrialization and Forest in Vidarbha:

- 1) Forests especially in Vidarbha are considered as a major constraint for development. However, they can be converted into a sustainable source of revenue generation for the inhabitants without disturbing ecological balance. The Government can take an initiative for attracting private investors to start industrial units like furniture, paper, handicrafts, sericulture, etc. This will provide employment to the local population and develop linkages with other areas by way of logistic parks and trade and commercial establishments. Wild growth of herbal plants can be put to good use by appropriate research & development for commercial production of herbal medicines. Eastern part of Vidarbha is bestowed with abundant minor forest produce. Appropriate policy of the government can encourage the activities of manufacturing lac, honey, etc. Small work groups should be formed maintaining the ownership and government support provided for scientific management and marketing of the products.

In order to survive and sustain, forests are turning into home grounds for rebels/terrorists (rebellions against the existing system). Appropriate intervention by the State to deal with the issues relating to the life of the tribal is the need of the hour.

9.3.3.5 Power Situation in Maharashtra and Role of Vidarbha

A large number of Thermal Power Plants (TPPs) are in the pipeline for the state of Maharashtra. In fact, it is a State with the largest thermal capacity development of

89,269 MW. This addition would amount to about 5 times the existing total capacity in Maharashtra, including hydro and nuclear. Most of these plants are coming up in Vidarbha (41,195 MW) or Konkan region (30,978 MW). On the face of it, there is a sound logic in these plans. In case of Vidarbha, they represent the actualization of the principle of using local resources for local development.

In Maharashtra, the peak demand of power has risen from 10470 MW in the Year 2000-01 to 18000 MW in the year 2010-11. As against this, the availability has risen from 8650 MW (2000-01) to 10100 MW (2010-2011). The level of deficit increased from near 1800 MW to 7900 MW during the same period. Out of an installed capacity of 10100 MW in Maharashtra, Vidarbha contributes 5600 MW (55.4%). As far as energy generation in million units is concerned, Vidarbha contributes around 53% of the total generation. But consumes only 12.5% in the region.

The average peak demand of Vidarbha region is 3000 MW in peak season (January) as against its generation of 5600 MW. It means that Vidarbha supplies power to the extent of 2600 MW to Mumbai, Pune and western part of Maharashtra, marked with no load shedding in a day. If load shedding, which is being carried out now, is considered then the export of power is more than 3000 MW.

At the end of the Twelfth Five Year Plan (year 2012-17) the demand in Vidarbha may touch 6000 MW (provided MIHAN project is fully operational). But considering the power projects under development, the export of power will continue to be the same or even more in future.

Per capita consumption of power in Maharashtra's industrial sector in terms of units is much higher than per capita industrial consumption at all India level. Power requirement for domestic and agriculture sectors in Maharashtra is also more than the average requirement of India. Please see Table 9.5 for details.

Table 9.5
Power: Per Capita Consumption

Type	India	Maharashtra	
	2010-11	2010-11	2011-12
1	2	3	4
Industrial Use	190	307	321
Domestic Use	131	175	185
Agriculture	107	145	191

Source: Economic Survey of Maharashtra 2012-13

Latest figures show that several districts of Vidarbha lag behind in household electrification compared to the State. Data from the Census 2011 shows that several districts of Vidarbha have household electrification rates lower than the state average of 83.9%. These districts include Gadchiroli (59.2%), Yavatmal (69.7%),

Washim (76%) and others. It's true that Marathwada is worse than Vidarbha in this indicator, but the irony is that Vidarbha has such low rates of electrification in spite of generating so much electricity.

In 2010-11, Vidarbha generated 24,757 Million kWh (million units) of electricity, which is about 28% of electricity generation in Maharashtra. However its total electricity sale within the region of Vidarbha in the same year was only 11,555 million units, which is about 13% of total Maharashtra. This is also reflected in annual electricity sale per capita. The per capita electricity sale for Vidarbha in the year 2010-11 was about 65% (502 units) of the average for Maharashtra (774 units).

9.3.3.6 Implications of Establishing Thermal Power Stations in Vidarbha Region

While the State sector has a large share of thermal power stations, the private sector is coming up fast to add the capacities in Vidarbha Region. Wardha Power, GMR, Lanco, IEPL, Indiabulls are some prominent companies likely to generate merchant power. All these are concentrated in Chandrapur, Amravati, Nagpur, Gondia and Wardha Districts. These projects are likely to have severe social and environmental impacts.

9.3.3.7 Excess of Pollution

Vidarbha region is facing a serious problem of pollution (particularly in areas having coal mining, thermal power plants, cement industries etc.) dominated by Chandrapur industrial area and is categorized as the 4th most polluted industrial cluster of India by Ministry of Environment and Forest in 2010. This is based upon the Comprehensive Environmental Pollution Index (CEPI) calculated by considering air, water and land pollution. It can be said that the higher CEPI of the region can be due to large number of coal based thermal power plants, coal mines, cement plants and steel & iron industries as these are considered to be highly polluting industries.

Information regarding source of coal is available for the existing plants and 13,545 MW coal based thermal capacity that has secured environmental clearance out of the 41,195 MW in pipeline. Out of this 13,545 MW, merely 420 MW will use coal from only WCL (the local source), 1,920 MW TPPs will use coal from WCL as well as other CIL subsidiaries (long distance) another 9,090 MW TPPs will use coal only from long distance sources like other CIL subsidiaries (SECL, MCL) and some captive mines from Maharashtra and Orissa. Indeed, even some of the existing power plants get their coal from long distances. This undercuts the very basis of the argument that TPPs in Vidarbha represent local development based on local resources.

9.3.3.8 Some Suggestions to Address Power Project Problems

1. To reduce pollution from existing power plants and enhance their efficiency of generation, Bag Filter Technology in place of Electrostatic Precipitator (ESP) should be used. This will reduce ash content particles coming out of chimney. Smoke-free exit of gases from the chimney should be made a statutory requirement.

2. Latest modern international technology should be used for disposal and utilization of ash. Reputed national and international companies may be approached to establish ash utilization plants at the pithead of ash generation. This will create employment potential for local habitats. Ash can also be used in cement manufacturing, crushed stone formulation (used for roads) and for canal surface layering (to reduce water leakages).
3. It has been observed that hectares of land become practically useless on account of transmission corridor for laying EHV lines through agricultural land. Such corridor land is presently not compensated adequately. It is suggested that the land owner of such a land should be paid a rational amount annually as rent to compensate for such a loss.
4. While we talk about thermal power generation only, time has come to adopt use of power from renewable energy sources like Solar, Wind, Biomass etc. In rural areas, concept of 'Distributed Generation' can be adopted economically. Small power plants of 250 KW/500 KW/1000 KW, using biomass duly gasified should be activated. Biomass like husk, baggase, cotton waste and local waste agriculture products can be used to the fullest advantage. This local fuel in powder form can generate power whereas gas produced in the process can be used by rural populace for domestic consumption. Small solar power plants of 250 KW/500 KW can also be thought of. Vidarbha region is having about 300s sunny days in a year with high intensity of solar radiation which can be converted into electricity. Hybrid combination of solar PV power generation with biomass power generation will result in adequate power generation for 24/7 use. Naturally this will enable the farmers to run their pumps during day time when otherwise it is not possible to get power from grid due to high requirement of all the consumers resulting into load shedding.
5. Separation of the roads for the local mobility from those used by the transport of coal, ash, other goods for the coal mines and thermal power plants, as the huge trucks for the latter not only damage the roads but also make them unsafe for public.

The implementation of these suggestions will significantly address the urgent need from both, the power planning perspective and the social and environmental perspective, to restore balance, good governance processes and initiatives towards development of Vidarbha region in the right direction.

9.3.4 Marathwada Region

Industrialization began in Aurangabad in the 1960s followed by 'Chikhalthana Industrial Estate' in the 1970s and Jalna in the last decade. Many small and medium industries started operations in these industrial estates. In the initial stages a number of outsiders were attracted on account of various incentive schemes offered by the Government. However over a period of time, their interest diminished and many of the units closed down.

In 1980s, 'Walunj Industrial Estate' was established due to the initiative of the State Government. Presence of majors like Bajaj Auto and Videocon changed the dimensions of the region and many ancillary units came into existence and entrepreneurship started taking roots at Aurangabad. The ambitious Jaikwadi dam proved to be a boon for industrialization in Aurangabad and nearby locations.

Since 1990, Aurangabad became the hub of automotive sector and the industry from the city is exporting the products to fifty two different countries. Apart from this, city is also an important tourist destination of the country because of Ellora.

The decade ahead should be treated as the decade of quantum growth. Many SSI have grown into progressive medium size enterprises.

Local entrepreneurs are on the growth path through implementation of effective and efficient control systems. While looking at the current scenario, it can be visualized that DMIC will become operational and will bring-in a quantum jump to the development of the area by 2020. The process of growth will continue and Aurangabad-Jalna is poised to evolve as a mega industrial belt of the state.

Marathwada can be divided into three distinct geographical regions in the context of industrialization

1. Developed region: In Aurangabad and Jalna one can feel the presence of industrialization and activities relating to technology, manufacturing business such as automotive, engineering, pharmaceutical, Agro-seed R & D, breweries, construction, steel & white goods etc. There is significant number of medium and large scale as well as small and micro businesses with stability and growth prospects. This has created significant employment generation opportunities.
2. Developing region: Latur, Osmanabad & Nanded have adequate industrial infrastructure, good connectivity and fair availability of water. Some initiative has already been taken by the industrialists to start industries in this region. However, there is lack of full scale industrialization in this area. Further infrastructure development along with fiscal incentives would create necessary business environment for the growth of industries in this region.
3. Undeveloped region: Even though there are industrial estates, only a few industries exist in Beed, Parbhani and Hingoli. Some industries, which are functioning, are mostly of agro-processing in nature and their scale of operation is quite small. Hence, there is neither big value addition nor much employment prospects in this region and this appears to be the biggest challenge for balanced industrial development within Marathwada.

9.3.4.1 Focus on Agro Industry

The emphasis on Agro industry will increase productivity and income of the farming population as well as create a whole range of opportunities for small business and services required by these industries. It will be easier for new farmer entrepreneur to move to a new business or service closely connected to his environment. In order to

achieve this vision the focus of industry strategy must be relentlessly on establishing, enhancing and expanding the linkages of agricultural activity with Industry. In the industrial plan of the district the following issues need to be addressed.

Move to a higher value chain: Linkages from the crop to process units and onward to markets must be firmly established in order to achieve a better value chain between the agricultural crops and the user processing units. The DIC office, NABARD, Lead Bank, Agriculture Colleges and MIDC must jointly develop the plan for creating and strengthening these linkages in an integrated manner, tying agricultural/producer/suppliers financial intermediaries and user units. Osmanabad is one of the districts of Marathwada which has potential for the implementation of above mentioned strategies and in turn it can emerge as State of the Art centre for agro industry.

New MIDC areas may be pre-allocated for specified 'Agro Processing Industries' and the entire infrastructure of the MIDC i.e. power, transport, warehousing & Cold storage, quality testing must address the specific need of that particular food processing sector. Market linkages must also be established in close proximity. There are four MIDC estates in the district, of these only the one at Osmanabad is developed while remaining three at Umerga, Bhoom and Kalamb are yet to be developed in a proper manner. The work relating to acquisition of land, water supply, electricity connections etc. is in progress. There is an urgent need to clear all the pending proposals at various stages for development of industrial areas/estates in different blocks.

Dedicated specialized food processing parks may be set up for the following

- Jowar by-products,
- Processing of fruit, oilseeds and pulses, soyabean and soya products,
- Milk and dairy products

In the district of Hingoli a cluster approach for different segments in agro based industries and more specifically for soyabean, will help to systematically upgrade farming and processing technology, improve quality and productivity, provide marketing and branding support and facilitate training of farmers, entrepreneurs and workers to achieve a well integrated food and food processing industry. Certain MIDCs in the district may be reserved exclusively for food processing cluster so that common infrastructural facilities can be located in these MIDC.

1. Technology in all aspects of textile industry is vital for a global leadership position in the sector. While textile industry is one of the major industries in the country, in terms of quality there is still a long gap in terms of producing world class textiles. Right from productivity and quality of cotton to processing technologies in post production finish of cloth, India is way behind the rest of the world and is fast losing out. "Virgin" districts like Hingoli provide an opportunity to set up a 'World Class Textile Park' or a 'Textile District' with a host of incentives to any unit in the textile value chain located in the district. It will be helpful if the State Government

declares the entire region of Parbhani – Hingoli. Washim a 'Textile Zone' offering a special policy package for each district.

2. A technology fund may be set up specifically for upgrading cotton ginning and pressing to install modern environment friendly and hygienic machinery and any expenditure to replace existing machinery with the latest in a related industry. The State must seek special allocation for the district from the Technology Fund of Rs. 1400 crore recently announced by the Centre.
3. Strategic and policy initiatives may be focused in the four agro based sectors like, Textile, Food Processing, Horticulture and Soya-based products. Since Hingoli, Parbhani and Washim are in close proximity, these initiatives will have to be taken together for all the three districts. However, before specific sector opportunities are evaluated we must look at the constraints faced by industry in the district.
4. Uninterrupted and adequate power supply must be ensured for the cotton ginning and pressing Industry.

9.3.4.2 Pharmaceutical Hub

Aurangabad is a major pharmaceutical hub with a presence of 60+ pharmaceutical units and with presence of many pharmaceutical giants.

City is proud to have 5 US FDA approved companies, which is an achievement by itself. Good density and quality of pharmaceutical degree / diploma colleges and Department of Chemical Technology of Dr. Babasaheb Ambedkar Marathwada University (BAMU) provide quality and adequate manpower for the continued growth of pharmaceutical hub.

9.3.4.3 Solar Energy

Recent technological developments in solar energy offer a strategic opportunity to Marathwada region given its solar resource endowments. With appropriate policies, this can become a game changer for industrialization for Marathwada. This technology as compared to fuel based thermal power generation is relatively much less water intensive and thus eminently suitable for Marathwada. Even the gestation periods required are relatively shorter. The committee recommends that the Government of Maharashtra announce its 'Solar Energy Policy' at an early date. Many states such as Tamil Nadu, Rajasthan, Gujrat are successful examples of such initiatives.

9.3.4.4 Recommendations

There is a need to establish an independent Aurangabad Regional Development Authority for roads, flyovers, drinking water supply drainage transport depot, sports complex, trade centers, tourist attractions and green cover of the city to meet long term growth prospects.

A focused development plan is required for industrial upliftment of the region for utilizing inherent strengths of the region;

1. Aurangabad – Jalna to be developed as an industrial corridor with an industrial township between Shendra 2 and Jalna 3.
2. All industrial estates of Marathwada to be connected to JNPT by 4 lane roads.
3. IT industry segment is one of the quickest industries to establish and can provide employment to many people in different skill sets. This sector will help to bring regional balance.
4. This committee endorses the MEDC's recommendations on promoting industrial development of Marathwada.

9.3.5 Industrialization in Rest of Maharashtra

In RoM, districts of Dhule, Nandurbar, Ratnagiri, Sindhudurg and most of the draught prone talukas across this region have been lagging in industrial growth. Each of its districts has its own strengths and comparative advantage.

Cotton cultivation has been well established in Dhule and Nandurbar. Per hectare yield of cotton is highest in Nandurbar district. It would be possible to develop textile industries in this region. These districts will be benefitting significantly with development of Delhi-Mumbai & Mumbai-Nagpur Corridors. Both of these districts are already commercially connected to adjacent states of Gujarat and Madhya Pradesh. It would be advisable to leverage the comparative advantage of these districts in cultivation of cotton to accelerate industrial growth.

Dhule has already emerged as a poultry region of Maharashtra. It would be possible to develop milk production and milk processing units in this district. Similar prospects exist in Jalgaon district as well. It has already emerged as a major food processing center, notably in pulses and chillies. This base can be further widened. Jalgaon is a major banana producing district of India. It would emerge as a major fruit processing district. Its railway connectivity and well established inter-state trade across northern India can easily be leveraged.

Similar prospects of horticultural and fisheries product processing exist in Konkan area. We have recommended acceleration and expansion of east-ward connectivity to Rest of Maharashtra. Such an improved connectivity would expand market access and opportunities for processed fishery and horticultural products of Konkan. State Government should encourage establishment of community food processing centers with capacity to handle wider range of fruits. Konkan is extremely rich in diverse types of herbs and plant flora. Many of these grow naturally in wild and with great abundance. Several of these medicinal plants can be cultivated and processed with arrangements of contract farming. Growth of tourism and education would further complement the process of industrial growth.

9.4 Emerging Avenues for Future Industrialization

The Delhi-Mumbai Industrial Corridor offers a huge opportunity for the regions in and around the nodes of DMIC in Maharashtra. The DMIC needs to be leveraged by the state to ensure big-ticket investments in the regions.

The proposed DMIC will provide State-of-the-Art freight corridor from the national capital 'Delhi' to the economic capital 'Mumbai', covering 1483 Kms and will pass through the states of Delhi, Uttar Pradesh, Haryana, Rajasthan Gujarat, Madhya Pradesh and Maharashtra. This is going to change the dimensions, directions and speed of industrialization in India. Mumbai –Delhi railway track is being treated as the reference line and approximately 200 Kms on either side of the railway track is being considered as DMIC belt and planning will be made to create logistic grid for this area. The catchment of DMIC includes 22 industrial estates, 9 freight destinations, 6 airports and 3 sea ports of 7 states. Out of the total area covered under DMIC Rajasthan covers 39%, Gujarat covers 38% and Maharashtra & Haryana cover 10% each. Dhule, Aurangabad , Nashik and Pune are the beneficiary destinations of DMIC in Maharashtra.

DMIC is being implemented with following vision and objective;

1. To be competitive at the international level,
2. To provide the State-of-the-Art basic infrastructure,
3. To provide conducive environment for local businesses
4. To attract large foreign investments and
5. To double the employment opportunity, increase the production output three fold and four-fold increase the exports four fold in the next 5 years .

Inclusion of Aurangabad and Dhule in the DMIC is a boon for the economically backward regions of Marathwada and Northern Maharashtra. Aurangabad region is also benefited by the National Investment and Manufacturing Zone (NIMZ) scheme, wherein 8 cities, which are included in DMIC are identified to develop as 'Smart Cities'. Aurangabad –Shendra is one of the 8 destinations. DMIC along with NIMZ can Act as 'Double Engine Growth Enabler' for the industrial, commercial and residential growth of Aurangabad.

DMIC and NIMZ present excellent opportunities to bring in speed, stability and definite growth to the backward regions of Maharashtra and hence, Government of Maharashtra should look at this opportunity in a very strategic perspective and evolve state industrial policies , strategies and action plan to complement DMIC and NIMZ so that the identified areas are effectively benefitted and at the same time the benefits should be directly or indirectly explored for the additional adjacent areas.

Though Government of Maharashtra is working on the balanced growth of all regions in Maharashtra and is giving special focus to the backward regions since year 1981, the fact remains that only one out of the 8 districts of Marathwada i.e. Aurangabad is close to average Per Capita Income and 'Human Development Index' of Maharashtra. Rest of the districts are far below the state average. In last 3 decades, Aurangabad city has grown four-fold due to industrialization and trade growth. This has resulted into additional employment, higher revenue and improved infrastructure. This money spinner has helped to improve 'Per Capita Income' and 'Human Development Index' (HDI) significantly in Aurangabad district. Certain credit for this growth must be given to industrialization. Looking at the fact, Government of Maharashtra should focus on DMIC project and maximize the advantages to the backward regions.

The DMIC and NIMZ projects will provide the following benefits to the region, which typically include

1. Availability of land for industry , trade and residence,
2. State-of-the-Art infrastructure,
3. Attraction of large scale units and MNCS.
4. Educational and training institutes
5. Research and Development (R & D) institutions and many more such benefits.

In turn, these benefits are going to create the following opportunities for Aurangabad and DMIC.

1. Growth of automotive and engineering hub.
2. Significant opportunities and growth for MSMEs because of the existence of auto and engineering units.
3. Research & Development (R & D) for the seed and pharmaceutical industries.
4. R & D for the processing industries.
5. Packaging and distribution of food products.
6. Opportunities for the textile industry, considering the availability of raw material i.e. Cotton.
7. Opportunities for electronic consumer durable goods because of good vendor base for such products in the region.
8. Very good opportunities for the supporting services like construction, transportation, raw material supply, consumable supply, hotel & restaurant, training etc.

To digest and utilize all such opportunities, region may not be geared-up today. However, State Government should take initiative to promote training facility for the local entrepreneurs to get geared-up for such opportunities. If State Government works in a proactive manner, plans for such opportunities and executes the planning effectively, the region will be significantly benefitted in terms of direct and indirect employment and stable long term growth objectives of State will also be fulfilled.

NIMZ is going to bring special benefits to Aurangabad. In this scheme along with industrial establishments, commercial and residential establishments should also be created in a planned and organized way. Normally, it is experienced that the industrial area gets well developed but poorly organized residential and commercial establishments are located in and around the industrial area. Over a period of time, such poorly established residential and commercial zone creates challenges for further growth of the region because it creates hindrance in the growth and portrays a sorry picture of the region because of which highly educated and trained employees and matured (high profile) organizations do not prefer such poorly organized destinations. By way of NIMZ, Aurangabad will have 'Smart City' project and this project will be the biggest attraction for the investors.

State Government should be very alert and should smartly couple nearby regions, which are not part of smart city project as complementary destinations by way of all systematic, comprehensive firm planning of international standard. The indications of such a plan are given in recent 'Industrial Policy of Maharashtra'.

While working out such big and cautious plans, opportunities come along with challenges. Such challenges are at the national level, state level and also at the regional level. At the same time, it must be kept in mind that, these challenges are political, administrative as well as social in nature.

DMIC will be implemented in 7 States at 22 locations and hence political + administrative + business + social “Energy and Synergy” will be different at different locations and this will impact motivation, participation, barrier, speed and quality of work at each location.

It should be carefully noted that Japan Government representative and industrial representative are the part of DMIC committee. These international representatives will closely monitor “Energy and Synergy” at various destinations. Hence, matured industrial destination like Maharashtra, should be proactive and should ensure that, it is implemented in its proper perspective.

In the context of above mentioned avenues, the region will face the following challenges and the result of which will be having impact on success of DMIC & NIMZ. :

1. Acquisition of land and rehabilitation of land owners is a key and sensitive subject. It is very important that the land owners should be properly rehabilitated, should get means of survival and should get an opportunity to grow. In the past, India has faced various challenges and we have an unpleasant legacy in this regard. Hence, rehabilitation and survival opportunity for the land owners should be a formal and comprehensive part of administration and political decision making, so that “Singrur” is not repeated. Both “farmers and industry” are growth enablers and job opportunity providers. Hence whether to protect the interest of farmer or of the industry should be identified on the basis of 'natural merit and advantages' of the location.
2. Generally, project affected people are farmer, Hence, education or professional qualification is a challenge, if industrial employment is chosen as their means of survival. It is strongly recommended that the status of the land owner should be maintained as owners and a portion of land should be re-allotted in industrial, commercial & residential zones and he or she should be trained, motivated and promoted to be an entrepreneur in the field of supporting services such as construction, transportation, warehousing security, gardening, hotel, shops, etc. This will help in quick and happy rehabilitation of affected people.
3. Availability of land & declaration of attractive schemes are not adequate to attract new business in the region. Residential infrastructural facilities & quality of life are equally important to attract new investments and employment. Poor city infrastructure and facilities deter the investors. Hence, along with such an industrial project, up gradation of city infrastructure is essential.
4. The way the captive power generation units are planned in DMIC in a similar way separate captive water supply arrangements should be planned for DMIC so that 'Agriculture Vs Industries' conflict can be avoided.
5. Multiple level, state and national agencies (Government Departments) such as DMIC, NIMZ, Ministry of Finance, Ministry of Commerce, etc. will be involved in establishment and approval process. Looking at the past experience, there will be multiple bottlenecks in approval process and industries are likely to face bigger challenges of such bottlenecks and resultant delay. To mitigate these delays we recommend that Government of Maharashtra establish a 'High Power Single Window' coordination agency.

9.5 Opportunities for “Knowledge-Based” Industries

Given Maharashtra's large number of higher and technical educational institutions, R & D establishments and growing pool of scientific and technological human resource-base, Maharashtra can become a hotspot for R& D and technological innovations in IT and ITes life-sciences, bio-tech, nano-technology, clinical research, molecular research, nuclear sciences etc. These industries offer considerable opportunities for growth and employment. Yet, one more area is emerging which is the field of defence production. All regions of Maharashtra will have considerable advantage due to their locational, institutional and human resources endowment to tackle these areas of knowledge based industries. Private SEZ can be converted to Defence Industry Zone for a potential head start to Maharashtra for exploiting opportunities in this sector.

9.6 Concluding Remarks

The regionwise / divisionwise distribution of industrial investment in Maharashtra portrays a picture of unevenness whether MSMEs or Mega Projects or MIDC industrial estates – all of them show a high concentration in a handful of districts.

The approach to reduce the disparities and, in particular, to ensure enhanced investment flows into the lagging regions of the State, has to be necessarily a multi-pronged approach and transcend the traditional approach of fiscal incentives or concessions.

As outlined in the above sections, the policy initiatives will have to cover areas such as statewide –policies, region and sector -specific policies. They also need to address SME-related issues along with expeditious completion of 'big-push' projects. The Government will also need to formulate policies to promote investment in knowledge based as well as defence related industries.



CHAPTER 10

Development of Water Resources

10.0 Introduction

In this chapter, we deal with Water as the critical resource in achieving regional imbalance. In our interactions with stakeholders, the availability and provision of water for different uses such as drinking water, irrigation, daily non-drinking uses and industrial uses emerged as the most contentious question. The natural availability of water is extremely diverse across all the regions of Maharashtra. Each region has its peculiar resource based opportunities and constraints. Hence complete equalization in every economic sense would be very difficult and nearly impossible.

10.0.1 As explained in the Chapter 4 ('Towards Balanced Regional Development: A Multidimensional Policy Approach') our approach to water has been treated in nuanced and differentiated way. Committee is of the view that equalization of access to water for daily drinking and non-drinking purposes (including livestock) should be the responsibility of the State government. It needs to be construed as the Public good and its provision would be feasible only with appropriate public investments at the level of State government and different local bodies. In view of this approach, we have presented our detailed assessment and estimates of resource requirements in this chapter. It is urgent to undertake every feasible effort of conserving and storing water. In view of this we have emphasized 'Actual irrigated area and storage of water on 15th of October every year' as the most crucial indicator of development. A significant part of the development deficit of the lagging regions is gauged in terms of the deficit in storage. Hence, we have suggested allocation of a very large portion of the investible resources which are based on the criterion of the Storage capacities to be created. These are presented in the Table no. (10.24)

10.0.2 Maharashtra has very large area of rain-shadow and water stressed drought prone regions. It is necessary to take multipronged approach in tackling the acute scarcity in this region. In addition to State level large and medium water resource storage projects, additional avenues should be pursued in dealing with this grave problem. Hence we have emphatically provided for water shed development, (para 10.11.2) ground-water development (sec. 10.12) and improved systems of water delivery and utilization through CADA (sec 10.10.2). In addition to these programs, we have suggested additional separate provisions for the region specific programs such as revitalization of Maji Malgajari tanks in Vidarbha (10.9.3) and water stressed regions and geologically difficult regions.

10.1 Committee's Approach

Apart from being complicated and complex, *water occupies an important central position in the context of our report*. It has occupied a prime position not only in the public/ socio-political debate but

naturally in the space of our committee's engagement. The sensitivity of the topic was reflected in the interactions that we went through and the time we spent to get it 'just right' is proof enough of the importance we attached to it. **Our nuanced - multidimensional, two track, institutional, and reformist approach – is nowhere better exemplified than in our treatment of water.** While we are aware of the predominance of irrigation (especially backlog conundrum) related discourse that has created so much heat in the public space, *we have taken a holistic view of water.* At the same time we have been sensitive to the extant perception and reality of injustices as well as the ongoing projects and have paid attention to irrigation.

10.1.1 Keeping to our **two track** approach, we make a distinction between water as a public good (to be equalized across citizens) and as a productive resource to be rationally and equitably provided across regions and sectors. In the first instance we believe that water will have to be provided on the basis of a norm to all the citizens of Maharashtra which will take into account, the drinking water and other related life needs of all the citizens in both urban and rural areas as a matter of right. The prerequisite for this will be adequate storage of water on the regional basis. In doing so, we have been careful to look at the temporal variability as well as the institutional aspects of (say) CADA, as well that of quality so that water is conveyed and distributed usefully thereby increasing efficiency of utilization of water resources displaying the **multidimensionality** of our approach.

10.1.2 Again, we consider **water stressed** regions slightly differently from the traditional manner. Thus, we treat DPAP regions as virtual regions in a special manner; we also recognize that the stress can be due to not just scarcity but also due to abundance, as well as issues arising out of special geological as well as topological features (leading to special problems of water management including flood control), and hence have a special treatment for such spaces. We recognize the alternative uses of water resources between Agriculture, Industry and Urban sectors. While the productive use of water as a resource is considered, we do not get into clear priorities but recognize that it will have to be informed (if not determined) by the underlying productivities involved in different sectors and their capacities for accelerating economic growth and sustainable livelihoods. Here we do propose leveraging of technology for more efficient use of water, especially in Agriculture at the same time proposing better pollution control so that the quality of water is enhanced downstream (especially of cities' effluents). Given the issues related to veracity of data as well as inbuilt political bias in considering shelf projects we have stopped short of taking a real long term view. We have only proposed priorities and actions that could be undertaken in the short and medium term and thence after review and better database propose the next steps.

10.1.3 Pricing does not as yet seem to get the importance that it deserves. Especially in the realm of water as a productive resource, rational water pricing will have to be crucially central to the setting of water policy in the long run. It will set the correct incentives as well as encourage better technology and more efficient use. Indeed, techno-economic feasibility will crucially depend on it and this along with the potential dictated by hydrological realities including

water precipitation, surface and underground water and retention capacities (geology) will help us to create an optimal policy path for water sector determining incremental investments and priorities in its wake. In not too long a future we expect policies to incentivize water markets that would help extract the value of this natural resource rationally and the management and planning of water on the basis of basins rather than regions and states and in consonance with the emerging national water policy framework.

10.2 Background

Maharashtra's total geographical area is 307.70 lakh hectares of which 225.4 lakh hectares are a “cultivable land”. Maharashtra is an important part of peninsular India with 720 k.m. of coastal line on the western side along Arabian Sea. Western Ghats of Sahyadri Ranges run almost parallel to coastal shores. Sahyadri hilly ranges are on the average 1000 meter above the sea-level. To the east of Sahyadri is the Deccan plateau region which slopes eastward with average height of 300 meter to 600 meter from sea level.

Table 10.0
Agro Climatic Zone wise Area and Rainfall

Agro Climatic Zone	Annual Rainfall (mm)	Area Covered (Lakh Ha.)
1	2	3
VRL- Very High Rainfall zone with Lateritic Soils	2000 to 3000	South Konkan Area mainly Ratnagiri & Sindhudurg Districts- Area-13.20 Lakh ha.
VRN- Very High Rainfall Zone with Black and Red Soil (Vertisol and Oxisol)	2250 to 3000	North Konkan Area mainly Thane & Raigad Districts- Area-16.59 Lakh ha.
GH – GHAT Zone	3000 to 5000	Hilly area of Satara, Kolhapur, Pune, A'nagar, Sindhudurga, Nasik Districts – Area-26.63 Lakhs ha.
TRI – Transition Zone I	1250 to 2500	Sloping portion of Nasik, Pune, Satara, Sangli, Kolhapur districts - Area-10.29 Lakh ha.
TTR2 Transition Zone II	700 to 1250	Some portion of Dhule, A'nagar, Sangli & Central portion of Nasik, Satara, Kolhapur districts.
SC – Scarcity Zone	500 to 700	Drought prone talukas of Nasik, Dhule, A'nagar, Pune, Satara, Sangli, Solapur, A'bad, Beed, Osmanabad - Area-73.23 Lakh ha.
AR – Assured Rainfall Zone	700 to 900	Some portion of A'bad, Jalna, Beed, Akola, Amaravati, Yeotmal, Jalgaon, Dhule, Solapur, & Osmanabad districts and most of the portion of Parbhani & Nanded districts and entire Latur & Buldana Districts - Area-67.80 Lakh ha.
MR Moderate Rainfall Zone	900 to 1250	Entire Wardha district, major portion of Nagpur & Yeotmal districts, Two talukas of Chandrapur districts, Some portion of A'bad, Jalna, Parbhani & Nanded districts - Area-49.88 lakh ha.
HRM – High Rainfall zone with soils from mixed parent material	1250 to 1700	Entire Wardha, Gadchiroli, Nagpur & Some portion of Chandrapur District - Area-32.16 Lakh ha.

Source : Maharashtra Water and Irrigation Commission (1999)

10.2.1 As Table 10.0 shows approximately more than 25% of the cultivable area (not given in Table 10.0) has a significant shortfall of water. The regions are indicated by block dotted curved lines. (Please see the agro-climatic map annexed in Annexure – 10.1

10.3 Population

As per 2011 census, the total population of Maharashtra has been 11,13,72,972 which is 9.29% of the India's population (121,01,93,422). Maharashtra has been more rapidly urbanising than rest of India. Share of work-force dependent on agriculture has been declining. Yet even presently a sizable section of population depends on agriculture and allied activities. Hence strengthening of agriculture and processing of agricultural produce, its marketing would be essential for improving prosperity and livelihood of rural population. Irrigation improves income, production and employment in agriculture significantly. Since formation of Maharashtra State, expansion of irrigation has been a crucial priority in development strategy. The committee has studied the problem of irrigation and agriculture of Maharashtra in every division of Maharashtra. Administrative Revenue Division and Agro Climatic Zone Of Maharashtra have great deal of correspondence and similarity. For the purposes of administrative arrangements Maharashtra State has been divided in six revenue divisions, 35 districts and 358 talukas. We have chosen to study and analyze irrigation requirement of agriculture and drinking water requirements primarily at the level of 'administrative divisions'.

Table 10.1
Region wise Population, District, Talukas, CCA and Rainfall (Including Mumbai)

Region	Population (2011)	Population %	No. of Districts	No. of Talukas	Geogra- phical Area (Lakh Ha.)	Culturable Command Area (Lakh Ha.)	Per Capita CCA(Ha) (8=7/2)	Average Rainfall (mm)
1	2	3	4	5	6	7	8	9
Konkan including Mumbai)	28629512	25.5	6	50	30.7	17.9	0.06	3161
Konkan Excluding Mumbai)	16151065	14.4	4	47	30.7	17.6	0.11	3161
Pune	23440998	20.9	5	58	57.3	45.6	0.19	1168
Nashik	18571535	16.5	5	54	57.5	40.2	0.22	796
Rest of Maharashtra	70642045	62.9	16	162	145.5	103.7	0.15	
Marathwada	18727748	16.7	8	76	64.8	59.3	0.32	825
Amravati	11266653	10.0	5	56	46.0	35.6	0.32	891
Nagpur	11736526	10.0	6	64	51.3	26.9	0.23	1330
Vidarbha	23003179	20.5	11	120	97.4	62.5	0.27	
Maharashtra	112372972	100.0	35	358	370.7	225.4	0.20	1360

Ref: Census 2001 and 2011 and metrological dept.

10.3.1 Greater Mumbai has no agriculture and 'agriculture dependent' population. **Hence in Konkan region area and population of Mumbai has been shown with and without Mumbai separately.** The area excluding Mumbai has *been* considered for study purpose.

10.3.2 In Table 10.2 we present comparative view of irrigation potential at the time of formation of Maharashtra State in 1960 and its present status. In the last 50 years after formation of the State the irrigation conditions have vastly changed. Irrigation potential has reached 47.40 lakh hectares. When compared across the revenue divisions, overall situation has improved and inequalities have lessened. Yet, the regions of Konkan and Amravati division have lagged behind remarkably.

Table 10.2
Status of Hydro Power, Water Storage and Irrigated Area
(at the time of formation of Maharashtra State and at present)

Item	Year 1960-61	Year 2010-11	Rate of Growth (Times)
1	2	3	4
Designed Water Storage Mcum	1574.40	33385	21.20
Irrigation potential created Lakh Ha.	3.96	47.4	11.96
Installed Hydro power capacity in MW	289.80	3578.73	12.35
Population (in Corers)	3.95	11.24	2.85
Irrigated Area (in lakh Ha.)	2.26	29.55	13.06
Water Use Non-Irrigation (in Mcum)	-	6955	

Ref: Irrigation Status Report 2010 of GOM.

Table 10.3
Status of Irrigation Potential Created Revenue Division wise (2010-11)

Revenue Division	Culturable Area In Lakh Ha.	Irrigation Potential Created as on 1960	Irrigation Potential Created as in 2010	Percentage of Culturable Area
1	2	3	4	5
Konkan	17.93	3.1	0.98	5.46
Nashik	40.16	3.1	9.7	24.15
Pune	45.56	3.1	15.41	33.82
Aurangabad	59.30	0.12	10.50	17.70
Amravati	35.62	} 0.74	4.6	12.91
Nagpur	26.85		6.1	22.71
Maharashtra	225.42	3.96	47.4	21.02

Source : Irrigation Status Report 2010 of GOM.

10.3.3 In Dec 1960, Government of Maharashtra constituted Irrigation Commission, under the chairmanship of the then Irrigation Secretary Shri S. G. Barve. The Commission's TOR included inter alia study of water resources and uses for various purposes, estimation of irrigation potential, development of irrigation potential in future. This commission had estimated that 52.61 lakh hectares could be irrigated through surface irrigation and ground

water resources would irrigate 41 lakh hectares. Later in 1995 the Maharashtra water and Irrigation Commission under the chairmanship of Dr. M.A. Chitale, estimated ultimate irrigation potential as 126 lakh hectares consisting of 85 lakh and 41 lakh hectares from surface and ground water irrigation respectively. According to the published data, state-level projects have created irrigation potential of 47.36 lakh hectares and 15.56 lakh hectares are created by local sector projects. In addition ground water has 31.82 lakh hectares of irrigation potential created. Hence 94.77 lakh hectares of total irrigation potential has been created. Thus 'created irrigation potential' is 75.19% of the estimated ultimate potential of 126 lakh hectares (See Annex 10.2), which can only be realized if advance techniques such as drip, sprinkler and piped distribution systems are used.

Figure 10.1
Percentage of Irrigation Potential to Culturable Area

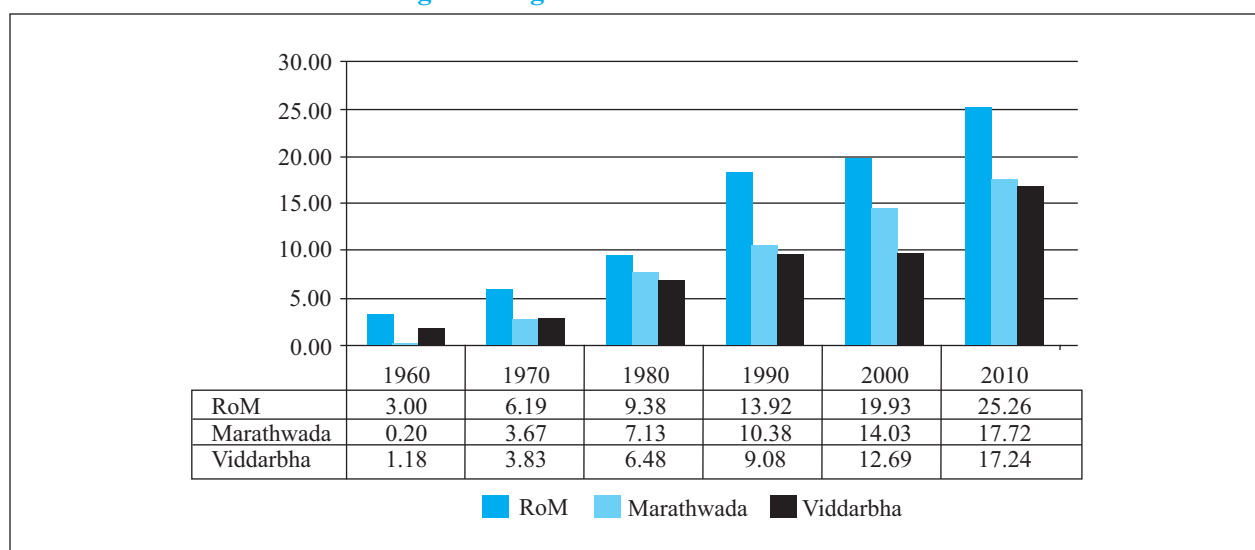
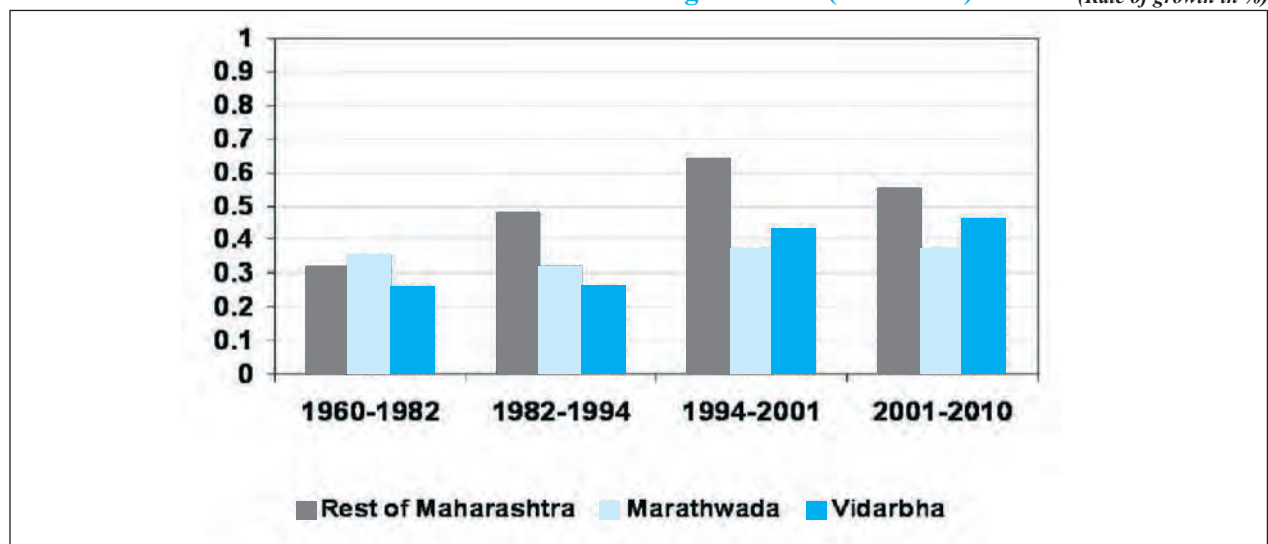


Figure 10.2
Annual Rate of Growth in Irrigated Area (1960-2010)



Comments - Figure 10.1 shows that the percent land irrigated was very low at the time of the State formation in 1960. The difference between the three regions was low. This percentage of irrigated land increased at a similar pace till 1980, after which it increase faster in the RoM widening the gap between three regions till 2010 to almost one and half times. The Figure 10.2 explains this as the annual rate of growth of irrigation in three regions. This rate was higher between 1982 to 2010 in the RoM. There is some catching of in the last ten years, but still inadequate.

10.4 Availability of Water Resources

10.4.1 Maharashtra principally receives rainfall from south-west as well south-east monsoon. Average rainfall of the state is 1660 mm. However, across the different regions of Maharashtra, the availability and dependability of rainfall varies widely. Konkan receives the average rainfall of 2000 to 3500 mm. The rain shadow regions in East of Sahyadri region receive rainfall of 450 mm. If we proceed towards eastern part of state, the rainfall received improves to 1000 or 1400 mm. Such wide variation causes extreme inequality in availability and storage potential of different regions.

10.4.2 Availability of water has to be considered by its sources such as rainfall, river-flows and ground water. Irrigation accounts for a large share of the overall uses of water. In the modern period, irrigation facilities have been mostly created through 'tempered' treatment of river-flows. Hence, water-resource availability is customarily estimated and assessed on the basis of river flows and complex of river basins. Total area of Maharashtra is divided in five major river-basins as below. Given the inter-state awards (on sharing of water) and the natural availability, total water-resource availability is as follows:

Table 10.4
Water Availability of Sub-basins in Maharashtra

Name of Basin	Geographical Area/%age with State Area (LakhHa.)	CCA % age with State CCA (LakhHa.)	Annual Average Water Availability (Mcum.)	Water Availability with 50% Dependability (Mcum.)	Water Availability as per Tribunal (Mcum.)	Water Availability per ha. Of CCA (Mcum.)	Category as per Water Availability
1	2	3	4	5	6	7	8
Godavari (With Waingangā)	154.3/49.5%	112.6/49.9%	50880	47708	34185	3037	Normal
Tapi	51.2/16.7%	37.3 / 16.6%	9118	9780	5415	1451	Deficit
Narmada	1.6/0.5%	0.6/0.3%	580	482	308	4813	Normal
Krishna	7.1/22.6%	56.3 / 25.0%	34032	34504	16818	2989	Normal
Rivers in Konkan [West Flowing rivers]	31.6/10.7%	18.6/8.2%	69210	69300	69210	37130	Abundant
Maharashtra	245.8/100.0%	225.4/100.0%	163820	161774	125936	5587	Normal

Source: Maharashtra Water and Irrigation Commission (1999)

10.4.3 Data in Table 10.4 reveals the wide differences across six revenue divisions. Maharashtra Water and Irrigation Commission has distinguished and classified the sub-basins in the entire state on the basis of water availability.

Table 10.5
Revenue Division wise Category as per Water Availability

Region	Area in Lakh Ha.	CCA in Lakh Ha.	Average Water Availability in Mcum.	Water Availability with 50% Dependability in Mcum.	Water Availability as per Tribunal	Water Availability cum/ Ha. (Col. 6/3)	Water Availability cum/ Ha. (Col. 4/3)	Category as per Water Availability
1	2	3	4	5	6	7	8	9
Konkan (Mumbai)	30.7	17.6	64501	65357	65357	36507	35968	Very High
Nashik	57.5	40.2	17478	13193	13635	3395	4352	Normal
Pune	57.3	45.6	32696	27603	16087	3531	7176	Normal
Aurangabad	64.8	59.3	15254	8749	8202	1383	2572	Deficit
Amravati	46.0	35.6	9813	9682	7033	1974	2755	Deficit
Nagpur	51.3	26.8	24077	19507	15622	5818	8968	Abundant
Maharashtra	307.7	225.4	163820	131562	125936	5587	7267	Normal

Source : Provided by the water resource sub group of the committee.

Table 10.6
Region wise Water Availability of Maharashtra State (Per capita, per ha.)

Region	CCA in Lakh Ha.	Population	Water Availability as per Tribunal in Mcum.	Water Availability Per capita (Col.4/3)	Water Availability in Mcum. Per ha. of CCA (Col.4/2)
1	2	3	4	5	6
Konkan with (Mumbai)	17.9	28629512	65357	2283	36451
Konkan Excluding(Mumbai)	17.6	16151066	64289	3980	36507
Nashik	40.2	18571535	13635	734	3395
Pune	45.6	23440998	16087	686	3531
Rest of Maharashtra	103.7	70642045	95079	1346	9173
Aurangabad	59.3	18727748	8202	438	1383
Marathwada	59.3	18727748	8202	438	1383
Amravati	35.6	11266653	7033	624	1974
Nagpur	26.9	11736526	15622	1331	5818
Vidarbha	62.5	23003179	22655	985	3627
Maharashtra	225.4	112372972	125936	1121	5587

Source : Provided by the water resource sub group of the committee.

10.4.4 Table 10.4 clearly shows that water availability per cultivable area is least in the Tapi basin. As a consequence north Maharashtra (Nasik Revenue Division) and Western Vidarbha (Amravati Revenue Division) suffer from water scarcity. It may be noted that in other river-

basins, as well, the availability among sub-basins differs widely. Maharashtra Water and Irrigation Commission had studied the water-resources in every sub-basin. The Commission has suggested that in view of the water-resource availability for Irrigation, these basins should be subdivided in five groups. This brings out clearly that the natural availability of water across these basins is highly unequal. Hence in planning of water-resources, the criterion cannot be uniform or identical across all regions. The 'regions with water scarcity' and 'regions with extreme scarcity' should be considered separately and distinctly from other regions. These regions of scarcity and extreme scarcity account for 13 % and 33 % of the total cultivable area (i.e. 46% of the total cultivable area).

- 10.4.5** Except the Konkan and Nagpur division, the natural availability of water in Maharashtra is not very good. Use of Water resources for economic development should, therefore, be planned with extreme care, efficiency and caution. In particular the regions with 'less than 3000 cubic meter of water per hectare' will have to be seriously re-considered about the appropriate crop-pattern under irrigation. The low rainfall regions should have an appropriate remunerative crop-pattern duly supported by relevant incentives and provision of agriculture extension services.
- 10.4.6** If we pursue this analysis in the context of the revenue divisions of Maharashtra, Aurangabad and Amravati divisions have irrigation water availability 'less than 3000 cubic meters per hectare'. Such low availability in these two regions is a matter of grave concern. **Annexes 10.3 and Annex 10.4 & Annex 10.5** present district-wise conditions of water availability.
- 10.4.7** Viewing and assessing water-resource availability by 25 sub-basins of Maharashtra is necessary and appropriate for planning and management of water resources. However, the other developmental needs, such as industrialisation, education, health, roads are required to be planned by administrative units (such as regions, districts, blocks, Panchayat etc). The 'sub-basin' wise water-resource data will have to be re-arranged by 'administrative units'. The resulting view of water resources by administrative units is presented in the *Annexure – 3*. This suggests that the districts of extreme water deficit need to be considered differentially. In the extreme water deficit areas (i.e. with less than 500 cubic meter water per capita) achieving all-round and overall development is an arduous task. Once again, it is the Aurangabad and Amravati divisions and adjacent areas that deserve serious attention. Additionally the permanently drought prone talukas also would require separate independent financial provisions and support. Such provisions would enable them to match the level of development in the less stressed regions. Financial resources for these regions will have to be mobilised from several sources (e.g. Government, Private Investment, Cooperative Investments, Bonds, World Bank, State, Union etc). Moreover, given the paucity of water resources, other infrastructural facilities such as education primary health care centres, nurseries, in situ water conservation through water shed development, green houses, shade-net, contract farming, water saving technologies such as micro-irrigation need to be emphatically promoted and implemented. We need to have a distinct system for dealing with independable natural availability of water and drinking water in the regions which have extreme and permanent deficit of water.

- 10.4.8** Development and harnessing of water-resources have to be endeavoured within the limits of legal cum natural availabilities. Level of achievements within the available framework has been summarised (and described) in Annex 10.6. In a region such as Maharashtra which critically depends on seasonal receipt of water, the relevance and importance of storage of water is immensely crucial. If judged on the criteria of per capita and per hectare availability of stored water, the regions of Amravati and Aurangabad stand out to be the most lagging areas. (See Annex 10.6) To meet diverse needs of development substantial increase in storage of water should be the high priority in coming ten years. It may be noted that natural and legal availability of water in Aurangabad Division is already nearly exhausted. Hence we have to seriously consider options in saving water, re-cycling and re-use of water and water shed development on priority basis. Similarly, a review and re-visiting of Godavari basin by a tribunal would be necessary.
- 10.4.9** Role of several small and medium sized irrigation projects and ground water development is evidently crucial in overcoming the disparities of natural water availability. By the end of June 2010, there were total of 3575 State level projects (which include 86 large projects, 258 medium size projects and 3108 State Sector small projects). These include both the 'completed' and 'partially completed' projects. In addition to these, there are 27928 local sector water conservation projects and watershed and ground water development projects. All these diverse types of projects taken together have created irrigation potential of 94.77 lakh hectares. It may be noted that the credibility of data and information pertaining to these diverse types of projects has not been uniform. Nearly half of the potential has been accomplished through State Level projects and the rest of the potential is achieved through local sector projects and ground water development.
- 10.4.10** Annex 10.7 describes annual development of the potential over last decade. All the divisions have registered continuous increase in water storage availability and irrigated area. Water storage and irrigated area has been remarkably better in Nashik Division. Nashik and Aurangabad division are connected via the Godavari basin. Increased water storage in the Godavari basin within Nashik Division has led to demand for sharing the benefits of increased storage for the downstream Aurangabad division. This demand has considerable importance in the context of regional balance. The committee hopes that Maharashtra Water Resource Regulation Authority (MWRRA) Mumbai, will provide appropriate regulation to address this issue.
- 10.4.11** Status of irrigation development is physically better indicated by the physical canal distribution network in the command area. Hence it is proposed to use the project's irrigation potential developed as the measure of development status. For improving the capability for utilising the developed potential in a better manner, separate measures like command area development activities need to be strengthened separately. But figures of utilized irrigation potential are highly variable from year to year because of annual rain fall variability.
- 10.4.12** The data presented in Annex 10.7 does not fully reflect the total water storage and irrigated area potential created in the State. The condition portrayed in Annex 10.7 is confined to 'State

Level' projects only. Availability of water storage and irrigated area in the local sector projects and ground water development is not captured in the data presented in Annex 10.7. Annual data on these sources of water storage and irrigation use by administrative divisions are yet not systematically collected and compiled. Nonetheless Annex 10.7 does reflect some significant features. e.g. Water storage, as well as established irrigation potential is least in Konkan and Amravati divisions and Annex 10.7 bears this out. *It may be noted that actual irrigated area is barely 40% of the created irrigated potential.* It is necessary to improve this situation through enabling Command Area Development Authority (CADA). This committee strongly advocates revival and revitalization of the CADA system.

10.4.13 Variability in the annual rainfall causes sharp fluctuations in 'water stored' and 'irrigated area'.

Such sharp fluctuations on annual basis are very important dimension of planning and actual management of irrigation projects. On the average, variations have been within the range of 30%. Variations are relatively much less and subdued in the Konkan region. However, in Nashik Division the storage was 3811 million cubic metres in 2006 and it declined to 2723 million cubic metres in 2009. This implies reduction of 25%. Similarly, in Aurangabad division water storage in 2006 was 6204 million cubic meters but declined to 2000 million cubic meters in 2009. This decline is worrisome and alarming. In 2008 irrigated area was 2.99 lakh hectares. However, it declined to just 1.27 lakh hectares in 2009. Such a variation in irrigated area is also a serious concern.

10.4.14 Amravati Division also reveals similar fluctuations. Irrigated area in this division was 1.14 million hectares in 2002 which did shrink to just 0.32 lakh hectares in 2004. Water storage in 2006 was 2342 million cubic meters which declined to 1142 million cubic meters in 2009. In Nagpur division, water stored in 2004 declined to 980 million cubic meters from 2886 lakh cubic meters in 2003. Similarly, irrigated area declined from 3.09 lakh hectares in 2003 to 2.13 lakh hectares in 2004.

10.4.15 Surface water potential in the Annex 10.8 is based on the provision made in sanctioned projects. Ground water usage potential is estimated on the basis of ground water that can be used by wells. Part of the water stored is also used during the rainy season as well. The data on this quantum keeps on varying every year. This variation is primarily caused by Gap intervals in the rainfall. Relationship between water use in the rainy season and the gaps between the rain showers has not been yet appropriately accounted. It is necessary to explore and gauge this relationship. But data on actual irrigation are available. Hence, it would be possible to use created storage potential and actual irrigation as relevant indicators.

10.4.16 Social and economic development is critically dependant on water storage capacity. We may compare Maharashtra State with other countries which have similar rainfall geographical area and geological morphology such as Australia, Spain, South Africa. The per capita storage capacity created in these countries is as follows:

Australia	-	4733 cubic meters
Spain	-	1410 cubic meters

South Africa - 753 cubic meters

Evidently, all of these are much higher than per capita storage capacity of 300 cubic meters as currently available in Maharashtra.

Note : The irrigation status reports of 2008 and 2009 had overstated water storage in Pune division. These data have been corrected in the report of 2010. Water stored in the projects has been continuously increasing over last decades. However, the irrigation potential in Pune Division has **declined in last two years due to increased urban demand of water. This deserves to be scrutinized further.**

10.5 Water Policy of Government of Maharashtra

10.5.1 Government of Maharashtra declared 'Water Policy of the State' in July 2003. Water Policy of Maharashtra is recognized to be one of the progressive water policies. Integrated Development and Management of Water Resources is the focal point of this policy. It also includes provision for review of the policy every five years or if necessary less than five years. Some of the important provisions of this policy would be helpful in strategic thinking about regional imbalance. These are as follows:

1. Mandatory public participation in planning, construction and management of water use.
2. Supply of water to the users on gross volumetric basis.
3. Delegation of irrigation management system to legally entitled Water User Associations (WUA).
4. Development and dissemination of new technology for improving productivity.
5. Preparation of a perspective plan for eradication of poverty and elimination of regional imbalance.
6. Transfer of water from 'water-abundant' regions to 'water-deficit' regions.

10.5.2 Among these provisions 1 to 3 relate to social organizational modalities and skills. So far analysis of regional imbalance has often been primarily focused on the 'structural aspects'. However it did not take into account the 'social' dimensions. Similarly, in the context of limited water availability, development in skills and technical abilities is critical for generating greater prosperity and actual realization of development benefits. In this view, the element four (4) mentioned above is extremely important. Moreover, we need to evolve a more comprehensive conceptual frame-work of measuring the benefits of irrigation projects. Such a comprehensive framework would not only consider cost elements of structural aspects but also include measures of social improvements and prosperity. For this purpose it is necessary to implement the comprehensive approach of Command Area Development. Some of the elements of this approach have been discussed in the section titled command area development here below.

10.5.3 Some of the industries such as Electronic or IT services require and consume less water. In the regions where water availabilities are low and inadequate, such industries should be

promoted and the necessary infrastructure such as roads, power, railways and air connectivity must be provided with necessary financial supports\aid. The districts lacking in industrial growth should also be considered with a similar strategy and policy support.

10.5.4 Maharashtra Commission on Irrigation and Water Resources (1999) has suggested many schemes of transfer of water across sub-basins e.g. it would be possible to transfer 7078 million cubic meters of water from lower Wainganga sub-basin (*Pranahita* river) to the deficit middle Godavari sub-basins. Middle Godavari sub-basin is mostly located in Marathwada. Both the indicators of water development (i.e. per capita water availability and irrigated area) of this region reflect significant water deficit in this region.

10.5.5 Following is the situation of water use by revenue divisions for the year 2010-2011. (Unit : million cubic meters)

Table 10.7
Revenue Division wise Water Use

(Mcum)

Region	Designed Storage	Live Storage on 15.10.2010	Evapo- ration	Water Use					Total Water Use	Percentage of Non-Irri- gation Use
				Irri- gation	Non-Irrigation			Total		
					Drinking	Industrial	Other			
1	2	3	4	5	6	7	8	9	10	11
Konkan	3501	3060	233	291	1076	270	1030	2376	2900	80.0
Nashik	4473	3574	819	2230	562	91	325	978	4027	22.0
Pune	10228	8800	1268	6387	930	112	458	1500	9155	15.0
Aurangabad	7508	6268	1416	3241	384	45	85	514	5171	10.0
Amravati	2969	2652	972	1247	117	3	58	178	2397	8.0
Nagpur	4706	2955	675	2051	190	135	4	329	3055	18.0
Total	33385	27309	5383	15447	3259	656	1960	5875	26705	21.5
Percentage with Live Storage			19.7	56.6	11.9	2.4	7.2	21.5	97.8	21.5

Source : Consolidated Information Provided by the water resources sub group of the committee.

10.5.6 As per Water Resource Regulation Rules 2005 Maharashtra Water Resource Regulatory Authority has been established. This authority is mandated to define water entitlements and ensure equitable distribution of water and preparation of integrated development plans for all river basins. In carrying out these functions, it is also mandated to take into account its implication for regional imbalance.

10.6 Fluctuations in Supply and Availability of Water

10.6.1 Planning of storage projects on the basis of average availability are generally more fruitful. In the years immediately after independence, the means and techniques measuring rainfall as well as water-flows of the rivers were of much inferior quality and less frequent. It was not possible to study comparative availability of water on the basis of different dependability

criterion. However, the conditions today are improved and much better. There are adequate data available and these could be efficiently analyzed with the use of computers. Hence, there is no reason to continue with the earlier legacy of 75 % dependability norm. Such criterion is not in vogue in any other countries around the world. It was used in India in the early years of development due to lack of comprehensive data on rainfall and river flows. Earlier canal systems were also built on the basis of diversion of river-flows. It was in these conditions the criterion of 75 % dependability was adopted as a 'working device'. This criterion deserves to be seriously reconsidered at the national level as well. The design and project planning in all basins and sub basins should be made on 50% dependability criteria or average availability.

- 10.6.2** The decision of the tribunal does not place any restriction on increasing size of storage or raising the heights of the dams. The restrictions put by the tribunal relate to annual utilization of water. Increasing the height of the dam may be very beneficial in raising storage capacity. However, acquiring necessary land may face formidable difficulties in the completed old projects. This would pose serious limitation on the option of raising the height of the dams. However, it may be considered if the necessary land is easily available and it must be seriously considered in case of the new projects.
- 10.6.3** It is generally presumed that the water supply needed for urban and rural domestic uses, perennial horticulture and industrial uses should have 90 to 95 percent dependability. In the years when availability of water drops below this level, it becomes necessary to restrain and ration the availability and provide water from sources outside the region. Such a situation may arise once in ten years. If such contingency is not adequately planned and provided for, large scale shifting of human and livestock population becomes inevitable. Present planning process does not separately and distinctly provide for such contingencies. Hence, as in case of earlier famine years of 1972-1974 or the present drought of 2011-2012, we are required to make ad-hoc calamity/disaster management efforts. Therefore, any development planning process and system which is dependent on water availability should anticipate such contingencies and also make explicit provision for handling disruption and disaster.
- 10.6.4** Such acute water scarcity is required to be handled by artificially arranging water supply through tanker based supplies. However, such remedies are cumbersome and extremely costly. Such temporary schemes of scarcity amelioration programmes are hardly effective in eradicating the causes of drought and famine.
- 10.6.5** It would be advisable to have independent, enduring piped and tap water based schemes for such water scarcity regions. These would ensure dependable water on the basis of transferring water from one area to another area. Similarly, greater financial provisions may be made for the schemes such as water shed development, ground water and well development, farm ponds, village ponds, small dams, improved power availability, micro irrigation techniques etc. These works should be completed in a time bound manner so that the water scarce areas can gradually catch up with the developed areas. Planning for water in these areas is remarkably different from other conventional water schemes. Ordinarily most of the water storage schemes referred in the Annex 10.9 are based on quantum of water-flow

in the rivers. The scheme in water scarce regions has to depend on water directly received from rains and efficient systems to hold and conserve such water received from rains. Concept of water shed development and ground water recharge are predicted on this principle. Planning for water in Amravati and Aurangabad division will have to follow this route than the conventional approach of re-directing and storing only the river water-flows.

Note : In the years 2008-09 and 2010-11 water use exceeded 100 percent of storage because of water utilization during kharif and utilization of water from the post monsoon inflows is considered together.

In some of the years water utilization appears much less because of deduction of utilization of water during Kharif seasons in conjunction with evaporation losses from total storage. In last five years this difference seems to exceed 30 percent. The water management system must equip itself to cope with such deficit.

10.7 Need for Additional Storage

10.7.1 Due to 'variability of rainfall received', the actual storages achieved by storage facilities across sub-basins are uneven. Some of them barely reach half of the storage capacity. Many of them remain even below half of their capacity and while few of them experience over-flow above the capacity. If we consider 'actual annual availability' against 'storage capacities created' across the sub-basins over a period of time, we find that in most of the sub-basins 'actual availability' is far much less than the 'storage capacity' created. In particular, basins of Purna and Tapi in Amravati region and sub-basins of Manjra and Seena of Marathwada division, the ratio of 'actual availability' to 'storage capacity' is less than 50 percent. To overcome the implicit deficit, it is necessary to create additional storage. By implication, there are two reasons for creating storage capacities in future.

- (1) In the regions wherever 100 percent utilization is allowed or the regions are characterized by scarcity/deficit or extreme deficit, it would be necessary to plan storage on the basis of average or less than average dependability criterion.
- (2) Create additional storage facilities with the explicit purpose of complete annual utilization of water available.

10.7.2 Hence planning and management of water resources in every river basin should prepare comprehensive detailed plan for incremental water storages by restructuring the basin plan by its sub-basins and watersheds included in these basins. State Government should urgently undertake preparation of such comprehensive basin-wise macro plans and expedite them at the earliest. This deficiency in water resource planning and management will result in failure to store adequate water needed for economic development and retard the development in a significant measure.

10.7.3 It would be advisable to construct a water development index in terms of the gap i.e. deficit between storage capacity and regional actual water availability. Department Of Water Resource in its annual report 2010 has published regional data on such gaps or deficit. Such

measures of deficit in percent terms may be used for the coming ten years and could be reviewed subsequently.

10.8 Government Appointed Committees and Study Groups Related to Water and Irrigation

10.8.1 There have been several committees and study groups which were appointed to decide water and irrigation policies including procedural modalities.

1. Maharashtra Irrigation Commission, (Chairman Shri. S.G. Barve) 1962
2. Fact Finding Committee for Drought Prone regions of Maharashtra (Chairman Shri. Sukathankar 1973)
3. Report of the Committee on 'Eight monthly water supply for extending irrigation benefits' – 1979 (Sarvashri Deuskar, Dandekar, Deshmukh)
4. High Level committee on Konkan Irrigation Development - 1980 (Chairman Shri. B. G. Khathal)
5. Report of 'Study of Western Ghat Water Resources' (Konkan Comprehensive Draft Plan - 1981 (Chairman Dr. M.S. Swaminathan)
6. High level Committee on Irrigation Management, 1981 (Chairman Shri S.B. Jain)
7. Report of 'Fact Finding Committee on Regional Imbalance in Maharashtra' – 1984 (Chairman Prof. V.M.Dandekar)
8. Report of the Study Group on Expanding Irrigation Potential in Maharashtra - 1986 (Chairman Shri. P. D. Kasbekar)
9. Maharashtra Water and Irrigation Commission – 1996 (Chairman Dr. M.A. Chitale)
10. Report of the Committee on Irrigation Backlog of Drought Prone Talukas – 2004 (Chairman Shri. V. Ranganathan)

10.8.2 In 1962, Barve Commission has recommended appointment of a committee to inquire and review working of Irrigation policy every 15 years. However, there has been no systematic machinery for collection of data, information and analysis on permanent basis. Hence, quality of policy review envisaged by Barve Commission has not been adequately attained. The Drought Prone Area Fact Finding Committee (Sukathankar)- 1973 also did recommend criterion of 50 percent dependability (instead of 75 percent dependability) as relevant criterion for drought prone region. Similarly, Sukathankar committee had also recommended integrated soil and water conservation works within water shed development programme. It also strongly underlined importance of public education and raising public awareness. Sarvashri Deuskar, Dandekar and Deshmukh,- three member committee also strongly advocated planning of irrigation projects on 50 percent dependability criterion. These have been important recommendations and deserve to be seriously pursued. This committee has taken into account the analysis and recommendations of these previous committees in conjunction with more recent data. On the basis of this analysis, we have made special recommendations for irrigation development of each division separately.

10.9 Irrigation Development: Overview of the Divisions

10.9.1 Irrigation Development in Konkan Division

On 17th October 1980 a High Level Committee under the Chairmanship of Shri B.G. Khataal was appointed to enquire into geographical and climatic characteristics, rainfall, cultivable land, prevalent and new crop patterns of Konkan and recommend time bound integrated perspective plan for irrigation development in Konkan. This committee submitted its report in March 1981 and it recommended separate Development authority for planning and command area development in Konkan region.

10.9.2 In 1981, Government appointed Western Ghats' comprehensive plan committee for Maharashtra (Konkan) under the chairmanship of Dr. M. S. Swaminathan. This committee has recommended separate research centre for agro-climatic information of Konkan, separate department for preparing designs and plans for dams and canals in Konkan and separate command area development authority of Konkan. It also argued for greater participatory role for farmer's organization in the administrative machinery. Similarly, it recommended planning of hydro power projects on average basis disregarding the conventional norm of 75 to 90 percent dependability and preparation of a comprehensive plan for small and micro hydro-power projects. Moreover, it recommended testing cum demonstrations centres for water management under laterite rock conditions and cluster of five or more villages as the basic planning unit for irrigation management in Konkan. There are many distinguishing features of Konkan as geographical and socio-economic region and it has its own unique requirements and needs. However, later policies did not take into account such distinguishing features and problems of Konkan sufficiently.

10.9.3 Natural availability of water in Konkan region is significantly high and abundant. Konkan inclusive of Mumbai has 2283 cubic meters of water per capita and 36451 cubic meters of water per hectare. However, following are the natural characteristics which pose serious difficulties:

- 1) Hilly region with high slopes and reliefs and most of cultivable area is located in narrow strips.
- 2) Geological structure in many areas mostly consists of laterite rocks. Storage of water in these rocks is difficult and we need to investigate and experiment about storing and managing water supply under laterite rock conditions. Jalkunda and micro irrigation schemes will have to be urgently activated.
- 3) Due to undulating slopes of the hilly regions it would be necessary to carry water through extensive network of pipelines.
- 4) Small water pond like storages and micro irrigation needs to be activated and popularized.
- 5) Distinct treatment and structures required for managing floods and flood like run-off. There are frequent floods and large expenditure is incurred for control of such flood

situations. We need to search for scientific alternatives to solve this problem permanent and enduring basis.

10.9.4 Irrigation Development in Amravati Division

In Amravati Region per capita and per hectare availability of water is only 624 and 1974 cubic meters respectively, which is much lower than state average. This division has also soil pattern dominated by deep black soil and kharpan patta lands in some parts. These lands are known to be very productive. However, due to this soil feature, technical approval of the project faces certain peculiar difficulties. It is necessary to revise technical and economic criterion to overcome these difficulties. Such a revision will improve and accelerate several projects in this region. In this view, this division deserves certain special schemes and arrangements. But such measures should be carefully considered as outlined in para 10.9.14.1 below. Due to deep black soil better utilization of water storage created by projects cannot be done by conventional canal systems. In order to improve utilization and distributive management of water, alternative methods need to be developed. (e.g. distribution through pipe lines). These requirements and special features should be taken in to consideration while preparing surveys and planning of the projects in the future.

- 1) This division has deep black soils and Kharpan patta type soils. Hence technical and economic criterion used in projects need to be appropriately redefined and revised.
- 2) There exists large scope for use of farm ponds and micro irrigation.
- 3) Implementation of integrated water shed development would be necessary.
- 4) Deficiencies in the distribution system of irrigation water need to be corrected.
- 5) Due to deep black soils in this region distribution and circulation of water based on pipeline networks will be necessary.

10.9.5 It is extremely urgent and necessary to remedy the deficiencies and pitfalls in the distribution system. Orange plantations in these regions critically depend on ground water irrigation. Hence implementation of independent programmes of water shed development and ground water development for these regions would be necessary. Following recommendations of Sukhatankar Committee Govt. Of Maharashtra has declared seven talukas viz. Amravati, Chandur Railway, Chandur Bazar, Tivasa, Warud, Nandgaon (Khandeshwar) and Morshi as permanent drought prone regions. In this view planning for drinking water schemes should be accorded top priority. Development of pipeline based supply network for water should be extensively adopted in this division.

10.9.6 Irrigation Development in Khandesh and Nashik Revenue Division

Tapi basin happens to be the principle basin in development of irrigation in Khandesh. This basin however, is a water deficit basin. The left over surplus of water from Narmada allotted to Maharashtra needs to be transferred to Tapi basin. Ground water levels in Jalgaon district have dipped below the depth of 30 metres. These depleted ground water resources need to be

replenished. Satpuda region is characterized by special geological composition, which is popularly called as Banjaada region. This geological structure allows rapid percolation and permeation of water. In this view, these zones should be treated with water shed development programmes which would improve the ground water available.

10.9.7 This sub-basin has thirty '*phad*' systems on 'bandharas'. Traditionally, the '*phad*' system was a collectively managed by the beneficiary people. Sakri Taluka of Dhule district has eight such '*phad*' bandharas and six of them are presently operative. Effective river flow and water availability in the Panzara river generally endures upto five to six months. The '*phad*' system has been gradually deteriorating due to lack of guaranteed quantum of water supply and other reasons affecting quantum of water availability. Therefore, the social and technical dimensions of irrigation management need to be reconsidered and re-aligned in the context of present objectives and times. A new network of Water Users Association needs to be developed and strengthened.

10.9.8 Part of a Godavari basin is located in Nashik Division. This part of Godavari basin is well developed due to ample rain water flows from Sahyadri hills. During British regime, ample availability of water from Sahyadri ranges was not considered as a part of comprehensive planning for Godavari basin as a whole. Planning of water storage was confined to the British territory and not extended beyond it. It would be now prudent to reconsider overall comprehensive development of the Godavari basin and consequent necessary revision of planning of water in Nashik division. This should be urgently considered by Maharashtra Water Resource Development of Authority, Mumbai. Godavari basin is characterized by water deficit. Hence, Maharashtra Commission on Water & Irrigation had recommended east-ward diversion of waters presently delivered to Mumbai from upper Vaitarna project to overcome water deficit in middle Godavari region. This recommendation should be implemented at the earliest.

10.9.9 Priority attention will be required for the following measures

- 1) Implementation of integrated water shed development.
- 2) Recharging of ground water on extensive basis. Geological structure i.e. Banjaada type would complement such recharging of ground water.
- 3) Farm ponds and micro irrigation should be accorded greater emphasis.
- 4) Distribution and circulation of water through close pipeline network to reduce wastage of water caused by hilly and the black cotton soils.

Godavari river is a common element that binds Nashik and Aurangabad divisions. Hence River Basin Development Authority for Godavari will have to be in position to plan and distribute water between two divisions. Natural availability of water is inherently unequal between these two divisions. Godavari river basin agency has already been created but it need to be reshaped as an authority to facilitate reduction in disparities of water availability and better, efficient and skilful management of water across the seasons and as well as across the years.

10.9.10 Irrigation Development in Marathwada Division

Per Capita and per hectare availability of water in Marathwada is the lowest in Maharashtra and far below the average availability of Maharashtra. (It is only 438 cubic meters Per capita and 1383 cubic meters per hectare) Unfortunately water available for Marathwada through the Award is hardly adequate. Major part of Marathwada region is permanently drought prone and considering vagaries of rains, implementation of water shed development programmes should be a top priority in this region. Moreover, in this region the techniques for storage of water requires a radical change. Irrigation in this region should not be based on river flows alone. Instead it would be prudent to store rain water in farm ponds, village ponds and check dams. Such storage of rain water in local pond storages and ground water recharge will stabilize the availability of water in this region. For this purpose, it would be essential to prepare detailed plans for development of water sheds on priority basis. Irrigation water needs to be distributed and circulated through pipeline network and micro irrigation should be extensively practised. At present Tribunal Award imposes restriction on use of water in Godavari basin. Hence, these tribunal decisions need to be revisited and reviewed. Westward flowing waters of Vaitarna River need to be redirected towards east for remedying the deficit of Marathwada in Godavari basin. Given the low availability of water, the crops which use less quantum of water should be encouraged and further processing of these crops needs to be incentivised e.g. pulses, oil seeds, cotton. Urban and industrial uses of water should be subjected to recycling requirements. Such recycling by urban local bodies and industries should be incentivised.

Following measures will need urgent attention

- 1) Implementation of Integrated time bound Water Shed Development Programme.
- 2) Emphasis on Farm Pond and Micro Irrigation Programme.
- 3) Distribution and circulation of water through closed pipeline network to reduce wastage of water caused by hilly terrain and the black soils.
- 4) Limitation on utilizable quantity of water, imposed by the tribunal should be revisited and reviewed.
- 5) It would be necessary to plan transfer of water from Vaitarna River into deficit Godavari basin for the Marathwada region.

10.9.11 Irrigation Development in East Vidarbha i.e. Nagpur Division

This region is endowed by the nature with abundant rains and rivers. Yet, more than the half of the water permitted by the Tribunal is not used either because projects are in complete, or not begun or even worse, not planned at all. In view of the Tribal population low income, the water can be a great boost to this region's economy. Crop pattern in Eastern Vidarbha is dominated by paddy cultivation. Other competitive alternative crop pattern would have sugarcane as a feasible crop. Earlier there used to be Sugarcane Research Centre in Shindewahi, Chandrapur district. However, cultivation of sugarcane would require perennial supply of water. Non-availability of perennial supply of water prevents this to occur. The

situation is fairly similar to that of Konkan. Moreover, like Konkan, there are limitations on cropping pattern as well. With availability of water, farms will suo-moto adopt double cropping. In this region, approval and implementation of irrigation projects suffer from forest act and hurdles faced by other environmental clearances. The irrigation projects in Eastern Vidarbha involving tracks of forest land take unduly long time in the grant of approval. The compensation to be paid for submergence of forest lands is unbearably heavy. Inclusion of such value of compensation in the cost of project makes the projects difficult to implement and reach completion. Hence, Net Present Value (NPV) of the forest lands compensation should be kept distinct and separate from the costs of project. This region is also affected adversely by Naxalite movement. These are the two primary factors that had held back material development in the eastern Vidarbha. Grant of additional resources should be made for the completion of the delayed projects as expeditiously as possible.

Following measures will need urgent attention

- 1) Removing technical and economic hurdles imposed by Ministry of Forest and Ministry of Environment.
- 2) Separate additional funds should be granted to expedite completion of projects which would accelerate the development in the region and prevent adverse impact of naxalite movement on development.
- 3) Revitalization of *maji mal-gujari* tanks and enhancing their storage capacities.
- 4) Redevelopment of *maji mal-gujari* tanks for promotion of micro irrigation system.
- 5) The region receives adequate water supply through rainfall. Speedy completion of projects will promote double or multiple cropping and impart economic stability in the region.
- 6) In the case of rivers such as Pranahita, Indravati, Vainganga, Wardha, it would be possible to increase irrigation potential with the combined use of Barrages and lift irrigation schemes. This would also be devoid of the barriers faced from Ministry of Forest Regulations.
- 7) Distribution of water through pipelines for areas with deep black cotton soils.
- 8) Watershed development projects should be implemented with highest priority.
- 9) Use of large potential of ground water.

10.9.12 The projects which assure and increase availability of water in the least developed and poorest of the poor regions of Vidarbha should be accorded highest priority. However, the present procedural and clearance guidelines of environmental and forest ministry have become a significant impediment in this process. These clearance procedures have proved to be a great bane for the projects in Vidarbha. Net Present Values (NPV) of the submerged forest area is an imaginary imputative notion. In addition to this provision for further compensatory afforestation is also necessary. Funds needed towards the cost of compensatory afforestation and NPV should be chargeable to the Consolidated Fund of the

State and should not be construed as the cost component for the region and the projects in the region. These should be considered as non-divisible charge on Consolidated Fund of the State and should not be attributed to the region.

10.9.13 There are 6862 *Maji Malgujari* tanks in the mid-Vainganga sub-basin. Most of these were constructed 300 to 400 years back during the regime of GOND Kings. Protecting paddy cultivation and enabling sugarcane cultivation was perhaps major objective of these tanks. However, at present these are at best used for paddy cultivation. Sugar cane crop has almost disappeared from the scene. In the British period, the management of these tanks was transferred to *malgujars*. This was done in view of establishing a system of revenue collection through *malgujars*. After independence Government made an effort to take them under its own fold. However, the system of collective effort and management which had developed and managed these tanks got gradually destroyed. Today, many of these *malgujari* tanks are defunct. Those which are still operative and functioning need to be reconstructed and redesigned. This system of irrigation which had its own origin in collective participatory effort needs to be rejuvenated. Data pertaining to the *Maji Malgujari* tanks with irrigation capacity of 0 to 100 hectares and 101 to 250 hectares across different districts has been presented in table below.

Table 10.8
Funds Required for Restoration Proposal of Maji Malgujari Tanks in Eastern Vidarbha

(Area in Ha. and Rs. in crore)

Sr. No.	District	0 to 100 Hectares		101 to 250 Hectares		Total Tanks	Total Irrigation	Funds required for Restoration of Maji Malgujari Tanks
		No. of Tanks	Irrigation Potential	No. of Tanks	Irrigation Potential	Potential	Potential	
1	2	3	4	5	6	7	8	9
1	Nagpur	216	6085	-	-	216	6085	122
2	Bhandara	1434	14564	28	7117	1462	21681	434
3	Gondia	1748	28664	38	6510	1786	35174	703
4	Chandrapur	1678	28102	51	10503	1729	38605	772
5	Gadchiroli	1658	22308	11	2133	1669	2441	489
	Vidarbha	6734	99723	128	26263	6862	125986	2520

Source : Page No. 26 & 28 Rural Development Department Booklet dated 01/04/2011.
Rs. 2 Lakhs per ha expenditure for restoration is derived by the Study Group.

10.9.14 These tanks cover nearly 1 lakh hectares or more of the total irrigated area. Appropriate crop pattern and irrigation management of such large hectarage is linked with this source of irrigation. Hence in coming few years, it would be prudent to have a sustained programme of rejuvenation of this near defunct system. It would be useful to apply the concept of command area development programme for the area covered by these tanks which would include aspects such as reconstruction, maintenance, people's participation in maintenance, changes

in the crop pattern and processing units for the agriculture output produced. Use and promotion of micro irrigation technique in conjunction with redevelopment of M. M. tanks will have to be promoted.

10.9.14.1 There is a demand for inter-basin transfer of water from water rich area to water deficit area. However there are fears and objections expressed from the concerned people. Hence it will be appropriate that such transfers be explored only when the below mentioned preconditions are fulfilled.

1. The present and the future water needs of the people from the host area are identified and planned for being completely met, before any quantity is declared as surplus. A full proof mechanism should be in place to assure complete implementation of these needs being met in a time bound manner.
2. A proper assessment of the Environmental and socio-economic impact of such possible water transfer is worked out and considered in the decision making and the required ameliorative measures are incorporated in the proposals.
3. As a consequence of the water transfer, compensation to the donor area for loss of benefits or distress caused if any by such a transfer should be worked out and incorporated in the project's proposal.
4. Since many water rich areas are inhabited by tribal people, protecting their rights and interest should receive the highest priority.

10.9.15 Irrigation Development in Rest of Maharashtra

This region has three main problems 1) Rapid growth and high level of water storage and irrigation in Pune division, but lagging behind of the Konkan region. 2) The large tracks of land under sugarcane crop which requires much water. 3) In the midst of this several talukas suffer water scarcity. In western Maharashtra, large part of Satara and Sangli districts are permanently prone to drought. Good part of this zone is located 600 meters above sea level. This constitutes the primary difficulty and hurdle for planning water resources inputs to these areas. In the areas such as Kavathe Mahankal, Mandesh, Aatpadi, Sangola which are located 600 meters above sea level have been suffering from drought even for three successive years. Displaced population due to Urmodi project has been settled in the same areas. This has further worsened the situation. The resettled population were hopeful of receiving water after their resettlement. Unfortunately they have no access to irrigation and even worse is the availability of daily drinking water. Lifting of water above 200 meters from the river is economically not viable, yet from the humanitarian perspective, it would be necessary to operate some lift irrigation schemes for these areas. Entire area in this region needs to be treated with water shed development programmes in a time bound manner. This would help to reduce the intensity of drought. Non-availability of Drinking water and fodder for life-stock happen to be very grave problems of this area. In view of this peculiar and difficult situation, operation of lift irrigation scheme should be considered as a special case.

While supplying water through such scheme farmers would be required to strictly abide by the crop pattern which would primarily focus on crops that consume low water and have higher value added per unit of water. Similarly, farmers would be required to use micro irrigation system such as drip or sprinkler irrigation. Micro irrigation needs to be duly supported by appropriate level of subsidy. Even those areas which are not at the same height from river levels such as in Ahmednagar and Solapur districts should also adopt the above mentioned restrictions. There are uneven landscapes consisting of high flat lands on one hand and low flat lands in the same basin on the other hand. These are areas of special geographic difficulties and frequent droughts. Such regions need to be treated differentially with distinct programmes. These areas also need integrated water shed development, farm ponds and micro irrigation technology. Development of these areas will depend on -

- 1) Implementation of integrated water shed development.
- 2) Greater emphasis on farm ponds and micro irrigation.
- 3) Distribution and circulation of water through system of pipelines for the areas with uneven, undulating and hilly terrains as necessary.
- 4) Special lifts schemes for drought prone and high flat terrains.

10.9.16 In Nagpur regions 80% of the area is under paddy cultivation. Like Konkan this region too, has no substitute for paddy as a crop. Any change in the crop pattern seems difficult in absence of availability of irrigation for at least two crop seasons. In the past, cultivation of Sugar cane was practiced for processing it into 'gur' (jiggery). It could be restored only if assured irrigation water is available. With increased area under sugarcane, sugar mills would also be feasible and viable. It is necessary to have a separate agricultural university for Vainganga basin.

10.9.17 Aurangabad Division reveals greater diversity in the crop pattern in the irrigated areas. In this division, share of crops under well irrigation is much better than share of canal irrigated areas. Crops with lower water requirement and higher value addition per unit of water need to be adopted.

10.9.18 Pune division has sizable irrigated area from canal as well as lift and well irrigation. However, 25% of the irrigated area is under the category of other crops. This division also have areas with water scarcity and extreme water scarcity. Therefore, change in crop pattern and switch in favour of micro irrigation will be extremely important and useful for general equitable development and to reduce rural inequality. In this view, in this developed region restructuring of crop pattern in the sub-basins and extensive adoption of micro irrigation techniques would be extremely beneficial. In fact for all regions where per hectare water availability is less than 3,000 cum. per hectare, the crop pattern should be seriously reconsidered. There should be ceiling or upper bound on the quantum of area for all the crops (including sugarcane) which require high quantity of water. The crops that could be grown with less rainfall or irrigation needs but command higher value should be promoted and incentivized through appropriate policies.

10.9.19 In Nashik Region, irrigated area under well irrigation is 1.5 times more than canal irrigation. Like Pune region, highest share of the irrigated area is accounted for the category of other crops (e.g. grapes). These two divisions show remarkable relationship between crop pattern and value added per unit of water. This would be interesting and demonstrative for the other regions as well.

10.9.20 Mere geographic accounting of irrigated land does not adequately reflect the underlined social and economic development. The level of prosperity in the irrigated region depends on the factors such as crops taken, market price commanded by such crops and development of processing industries related with these crops. Hence, it would not be advisable to consider quantum of irrigated area by itself. One should take into account nature of crop its per hectare productivity and related prospective processing of such crops. For this purpose, one should have more comprehensive perspective of command area development which has a more integrated view of the economic prospects generated by availability of irrigation in conjunction with agro-processing industries. Thus, changes in crop pattern, storage of crops and growth of processing industries should be considered as integral linkage in planning and managing for irrigation system.

10.10 Concept of Development of Irrigated Area

10.10.1 Difficulties Faced in Irrigation Management at Field Level

There is a large gap between actual irrigated area and irrigation potential created in terms of area. Development indicator based on actual land irrigated should be adopted. In coming 10 years, deficit in irrigated area should be based on such an indicator. Government of India had commissioned a study to IIM Bangalore to investigate and study this gap. We present here notable conclusions and observations made by this study and past experiences of the department in managing irrigation system as well as field visits made by the sub-group on water of this committee.

- 1) Dams or storage facilities are not filled up to their maximum capacity every year. Consequently as a proportion of utilizable water capacity less volume of water is actually available.
- 2) Farmers in the command area of the projects prefer cash-crops with high water requirement and intensity such as sugarcane, banana.
- 3) Demand for water is much less in kharif season.
- 4) Due to rapid urbanization, increased proportion of water has to be reserved for non-irrigation purposes.
- 5) Distribution system in the command area is incomplete and inadequate.
- 6) Many of the expected delivery points and destination failed to receive water discharge because of deficiencies in distribution systems.
- 7) Due to lack of funds for maintenance and repair works of canals distribution channels and sub-channels are not undertaken.

- 8) Measurement of crop area and crop patterns in the command area are inconsistently made.
- 9) Beneficiaries do not have active participation in planning and management of command areas of the project.
- 10) Canal Advisory Committee Meetings prior to the start of season don't take place or take place belatedly. This advisory committee does not have representation of beneficiaries and water user associations. Beneficiaries And Water User Associations do not have coordination with this committee. Hence, planning for farming and crops becomes untenable for the beneficiaries.
- 11) In Kharif, Rabi and Summer season water available for agriculture supplied from the dams is subjected to arbitrary untimely cuts.
- 12) Due to increase in cumulative siltation in submergence areas ratio of live and gross stock of water diminishes reflecting diminished capacity of the project to store water.

10.10.1(a) One of the important objectives of irrigation development should be to make farming possible at least over 8 months' period. In the 4 months of the rainy season, protective irrigation should be provided as and when necessary. Thereafter an irrigated crop should be possible at least for the winter season- thus providing irrigation coverage at least over a period of 8 months. Irrigation systems will have to be planned and managed with this objective in view.

10.10.1 (b) The graphs under para 10.3.3 depict trend of irrigation development in Maharashtra for over last 50 years. In 22-24 years of these 50 years, actual irrigated area is less than 60 percent as seen from Table 10.9 here below. Therefore, improving efficiency in utilization is also an urgent need.

10.10.2 Development of Command Area

Objectives and Expectations: In the concept of command area development socio-economic development of beneficiaries located in the command area is to be accomplished together with physical and technical deliveries to be made in the field. Therefore, organizational and implementation mechanism is required to have participation of many other departments or organs of the Government. Such a structure was in operation since 1980 till end of 2000. However, presently no such system seems to exist in an effective manner. Command area development programmes imply not only optimum use of water and land but also the fulfilment of needs and expectations of the beneficiaries. The minimal needs of beneficiaries are as follows:

- 1) Distribution system that takes the water from the dam right upto the farm. (earlier water was delivered upto 40 hectare block)
- 2) Distribution system must deliver water in optimal required quantity with a reliable timely schedule of delivery.

- 3) Appropriate land levelling if farmer is expected to receive water by flow method.
- 4) There should be an agency for supplying information concerning good practices of irrigated farming, choice of crops, seeds, fertilizers, insecticides and pesticides, their appropriate doses. Training of farmers should also be undertaken by such agency.
- 5) Farmer should have information concerning difficulties faced in farming their fields and possible remedies for overcoming such difficulties, and research in agriculture universities.
- 6) Uses of such knowledge in one's own farm needs financial investment which in turn must be supported by credit. Thus the farmer would also need assistance in accessing credit.
- 7) There should be adequate farm-roads connecting farms to closest road transport.
- 8) Availability of organized markets and processing centres for agricultural produce.
- 9) The above mentioned needs of the farmers are spread across the domain of different functional departments. These departments should have co-ordination among themselves and their capacities should be pooled under the umbrella of command area development authority.
- 10) Concept of new CADA should be made an integral part of the irrigation development. All large, medium and small irrigation projects should be brought under command area development programme and these projects should be arranged and pooled on regional priority basis. Accordingly development mechanism and structure of CADA needs to be appropriately modified and revitalised. The administrative machinery of New CADA must be multi-disciplinary in character e.g. it should have Irrigation engineers, agricultural engineers, agricultural economist, agricultural extension officer, officers from co-operation, marketing, processing, storage and warehousing, headed by Agriculture engineer. The functions of water management (e.g. delivering water on volumetric bases to the user or group of users) should be entirely delegated to New CADA. In all of the projects, whether large, medium or small or *Maji Malgujari* tanks, should have a separate component of New CADA.
- 11) The administrative machinery for the management of irrigation projects must improve its water distribution efficiency and should keenly adhere to the principle of delivery of water on volume metric basis for irrigation as well as non-irrigation purposes.

Table 10.9
Revenue Division wise Funds Required for Removal of Deficit of CAD Works

Sr. No.	Revenue Divisions	State Sector Created Irrigation Potential upto Jun2010 (Lakh ha)	Actual Irrigation in 2010-11 (Lakh ha)	A- For Deficit Removal		
				Ratio of Actual Irrigation to Created Irrigation Potential	Deficit in Actual Irrigation (Col 4-Col 5) (Lakh ha)	Fund Required for Deficit Removal (0.50x Col 6 x 10 ⁵)/100 (In Crore)
1	2	3	4	5	6	7
1	Konkan	1.0	0.1	0.1	0.9	430
2	Nashik	9.7	5.3	0.5	4.4	2207
3	Pune	15.4	14.6	1.0	0.8	394
A	Rest of Maharashtra	26.1	20.0	0.8	6.1	3031
4	Aurangabad	10.5	4.4	0.4	6.2	3079
B	Marathwada	10.5	4.4	0.4	6.2	3079
5	Amravati	4.7	1.8	0.4	2.8	1418
6	Nagpur	6.1	3.3	0.6	2.8	1382
C	Vidarbha	10.8	5.2	0.5	5.6	2801
	Maharashtra	47.4	29.6	0.6	17.8	8911

Source : 1) Figures in Col.3 are taken from Table 18, Col, 4 Page 72-73, Sinchan Stithi Darshak Aahwaal Sep 2011
 2) Figures in Col.4 are taken from Table 18, Col, 10 Page 72-73, Sinchan Stithi Darshak Aahwaal Sep 2011
 3) Requirement of Rs 50000 per ha for CAD works is taken from CADWM Circular dated of MoWR GOI.

10.10.3 Transfer of Management of Irrigation System to Beneficiaries

Transfer of irrigation management is presently regulated by two regulations (a) co-operation rules, 1960 and (b) Maharashtra Management of irrigation system by farmers Rules, 2005. Transfer of power to manage the system to work water user institutions (agencies) and area handed over to them in different divisions is summarized in the table at Annex 10.10.

10.10.4 As indicated in Annex 10.10, all divisions except Konkan seem to be progressing at the similar rate. However, there remains a very large outstanding area which still awaits the intended transfer to the WUAs. CADA machinery will be required to accomplish this onerous progress in coming two to three years. Konkan division affords a great scope for many novel schemes for command area development and management. However even greater effort may be required to establish organisations of the beneficiaries. Government of Maharashtra has already adopted the policy of delegating irrigation management to the beneficiaries. However till June 2010 only 11.61 lakh hectares out of 47.01 lakh hectares of irrigated potential of state sector projects has been handed over to the beneficiaries. Position in the local sector projects is even worse. Social participation in the project management is one of the important index of irrigation development. In particular the regions suffering from severe deficit, better, efficient and less wasteful management of water used assumes even greater significance. In such regions establishment of water distribution management institutions with social participation should be considered as a high priority. In coming five years a special drive should be taken up to create and strengthen such institutions.

10.11 Water Conservation Programmes

10.11.1 Local Sector Small Irrigation Schemes:

In 1992, Water Conservation Department was established for the implementation of small size irrigation schemes (i.e. the schemes with irrigation capacity of 0 to 250 hectares). Earlier, small size projects upto 100 hectares were also implemented by water resource department. Water resource department handed over all of the already completed schemes together with new proposed schemes to water conservation department. So far, there have been 64391 small irrigation schemes completed and these have created irrigation potential of 15.55 lakh hectares. The total cost of these schemes is Rs. 4587 crores. There are 6704 ongoing small irrigation schemes with irrigation potential of 1.91 lakh hectares and estimated cost of these projects is Rs. 2769 crores. In future 10597 small irrigation schemes could be undertaken. These would create additional irrigation potential of 3.6 lakh hectares and would require Rs.1735 crores. Districts or Talukas where area under irrigation is low, it would be advisable to complete small irrigation scheme works in immediate coming five years. Table below shows the status of completed projects by divisions. Irrigation potential and area developed through local sector schemes should be included in data pertaining to irrigation potential created.

Table 10.10
Region wise Local Sector Projects Completed

Sr. No.	Region	Total Geographical Area Unit (Lakh ha.)	CCA (Lakh ha.)	No. of Projects of Local Sector	Irrigation Potential Created (Lakh ha.)
1	2	3	4	5	6
1	Konkan	30.73	17.93	4095	0.58
2	Nashik	57.5	40.16	5657	3.99
3	Pune	57.28	45.56	4553	3.10
4	Aurangabad	64.82	59.3	3448	4.25
5	Amravati	46.02	35.62	1364	1.17
6	Nagpur	51.34	26.85	8811	2.47
	Maharashtra	307.7	225.42	27928	15.56

Source : Report published by the Chief Engineer, Local Sector 1.4.2011.

10.11.2 Water Shed Area Development

When natural water flows over a given specified area and tends to converge to form a unified flow, such an area is referred to as the water shed area of the flow thus formed. Generally, water shed area is a result of natural physical configuration of that part of region. Typically, the rain water flows over the surface, emanates into water-run-off channel that flows within the area and then exudes itself out from a single location. Water shed area is circumscribed by runoff dividing ridge lines. Any and every 'water storage' on the ground and every 'body of water flow' has its own water shed area. Water shed area could be very small or very large.

10.11.3 Ground water survey and development agency of Maharashtra has delineated states total geographic area in 1505 water shed areas. In the last five years these have been slightly

revised. Primary objective of this delineation was for the assessment of ground water availability and they are defined by the basic constituent factors such as rainfall, geological structure, soil, slopes and reliefs etc. However, such identification of water sheds is unwieldy for the purposes of handling and treatment. Hence these were further sub-divided in minor and micro water sheds. Ground water survey and development agency, Pune has considered the entire geographic area of Maharashtra for demarcation of water sheds. Agriculture department has further subdivided the watersheds into micro water sheds for detailed treatment measures.

	Area lakh hectares
Total Geographical Area	307.70
Area suitable for water shed development	241.00
Area so far treated	126.00
Remaining treatable area	115.00

10.11.4 This approach has a different objective of defining cultivable area in the context of water shed development. Hence, only treatable area has been considered (Annex 10.11).

	No. of Water Sheds
Total no. of micro water sheds	44185
No. of micro water sheds selected	34143
No. of micro water sheds treated fully	11629
Incomplete micro Water sheds	15387
Water sheds where work has not yet commenced	7127

Table 10.11
Region wise Micro Watersheds

Sr. No.	Region	No. of Selected Small Water Sheds	No. of Small Water Sheds Where Watershed Development has been Started	No. of Small Watersheds Where Development is Completed	No. of Incomplete Watersheds	No. of Watersheds Where Watershed Development Programme is yet to be Started
1	2	3	4	5	6	7
1	Konkan	2397	1576	703	873	821
2	Nashik	6849	5768	1932	3836	1081
3	Pune	7905	6464	1744	4720	1441
4	Marathwada	7690	6513	3293	3220	1177
5	Amravati	4810	3263	1896	1367	1547
6	Nagpur	4492	3432	2061	1371	1060
	Maharashtra	34143	27016	11629	15387	7127

Source : Provided by the Water Resources sub group of the committee

10.11.5 Classification of total geographical area into what is amenable for watershed development (241 lakh hectares as indicated above) and the rest of the area that is not suitable for water shed development is grounded in the following factors. First of these is related to the criterion meant for preventing siltation in the irrigation reservoirs of the given river basin. For these purposes, following indices are considered (1) Siltation Index, (2) Run-off Index and (3) Land Productivity Index. Among these Land Productivity Index consists of (i) average soil conditions (in percent), (ii) texture of the soil (in percent), (iii) Slope and relief (in percent), (iv) Location specific conditions such as acid or base properties, erosion affected soils, etc. and (v) Rainfall grade (in percent). These are considered in determining developmental priority of water shed development. Commissioner of Agriculture of Maharashtra and Director Soil Conservation have defined the Water Shed Development priorities by districts taking into account average condition of the water shed, water retention capacity of the soil, class of the soil and average rainfall. In these water sheds soil conservation and quantum of water available are most important. It is important to note that the primary objective of water shed development is stabilization of ground water and increasing the availability of water beyond canal irrigation projects. In that case, it would be necessary to undertake water shed development works within the command area of the projects as well. So far undertaking soil and water conservation works within command areas of the projects were not favoured. Such prohibition has since been somewhat relaxed. But it needs to be completely withdrawn so that it would facilitate development of water sheds and farm-ponds within command area.

10.11.6 Water Shed Development and Water Availability

Implementation of water shed development projects with people's participation have invariably improved standard of living in the rural areas. Some of the villages have accomplished this nearly 25 to 30 years back and have been able to increase irrigation and improve productivity. Water availability varies from location to location. Rainfall geological structure, land structure and pattern are the crucial factors for this purpose. After 1983 different climatic regions have implemented water shed development such under different programme as Western ghat projects, drought prone area development program or river basin catchment improvement project etc. On the basis of assessment of these projects per hectare water availability has been estimated and defined. Data on number of wells before and after project increase in irrigated area and number and size of water storages are available. Such assessments have been undertaken by different agencies. Agricultural Finance Commission has evaluated Kaalwani (Ratnagiri), Peth (Nasik) Dhadgaon (Nandurbar) South Solapur, Sonegaon Aabaji (Vardha), Palaspaani Chanduri (Bhandara). Central Soil Conservation Centre, Dehradun has evaluated Kolhewadi (Ahmednagar) , Padalshengi (Beed), Sasure (Solapur). Maharashtra Commission on Water and Irrigation studied and evaluated Kamini Water Shed(Pune). Krishi Vidnyan Kendra, Jalna and Central Research Institute for Dry Land Areas (CRIDA), Hyderabad provided data and report on Kadawanchi (Jalna). On the basis of the data from such studies estimates have been built-up. Considering irrigated area under different crops and their duration and evaporation rates by districts, the availability of water by water shed and volume of water per hectare has been quantified. These are presented in Table No. **10.12** Per hectare availability of water has been determined on the basis of total gross area in the watershed.

10.11.7 Data presented in Table 10.12 reveals interesting observations. Water Availability due to water shed development treatment is lower in the higher rainfall zones. e.g. Kaalwani and Peth. The nature of geological structure in this region is responsible for such outcomes. The water shed development programme of Dhadgaon, South Solapur, Loha and Mukhed were part of river basin improvement projects and were not completely treated. The main objective of these programmes was prevention of soil erosion and reduction in siltation. On the other hand, Kadwanchi and Punjab Rao Krushi Vidyapeeth(PKV) Water Shed Development programmes used water shed treatment in comprehensive and integrated manner. No aspect of treatment was ignored resulting into increased water availability i.e. 2027 and 3666 cubic meters per hectare respectively. It is important to note that in spite of complete treatment in both the locations water availability in PKV water shed has exceeded that of Kadwanchi by 1600 cubic meters. This is explained by two factors. Kadwanchi is located in the region with the rainfall of 550 to 600 mm whereas PKV water shed has 850-900 mm of rainfall. Moreover, the soil class in PKV has greater capacity to retain water.

10.11.8 If we consider 13 water shed areas except in Kaalwani and Konkan, per hectare additional water availability works out to be 903 cubic meters. This suggests that 30-31 percent of the treated area would be irrigated on the basis of the norm of 3000 cubic meters per hectare irrigational requirement. Of course, this also means that large part of the treated area can also have protective irrigation.

Table 10.12
Watershed Development and Water Availability

Climatic Zone	District	Watershed	Area Ha.	Additional Irrigated Area (Unit)	Additional Water Availability Cum	Water Availability Cum per Ha.
1	2	3	4	5	6	7
Jambha type lands having heavy rainfall	Ratnagiri	Kalwani	1275	No Irrigation	No water Availability	Percolation due to Jambha type soil
Transition Zone-1	Nashik	Peth	1011	12	240000	237
Transition Zone-2	Nandurbar	Dhadgaon	3248	8	160000	600
Drought prone area-A	Solapur	South Solapur	3234	130	1950000	602
Drought prone area-B	Pune	Kamini	3606	30	1843000	510
Assured rainfall zone	Jalna	Kadwanchi	1888	195	3822000	2024
	Nanded	Loha	3567	100	1200000	336
		Mukhed	3294	70	840000	255
	Akola	P.K.V.	24	8	87984	3666
Drought prone area-A	A'nagar	Kolhewadi	489	-	167500	342
	Beed	Padalshingi	390	-	218000	558
	Solapur	Samure	180	-	108000	600
Sufficient to heavy rainfall Zone	Wardha	Sonegaon Abaji	1145	33	495000	432
	Bhandara	Palaspani Chandur	834	34	564000	676
Average						903

Source : Provided by the water resource sub group of the committee.

10.11.9 Water Shed Area Development Programme

Total area amenable to water shed treatment in Maharashtra is 241 lakh hectares. Of this 126 lakh hectares have been treated and 115 lakh hectares remained to be treated. Annex 10.11 indicates the status of complete and incomplete treated areas by revenue divisions. Revenue division wise deficit in this respect is indicated in Annex 10.12. Only 25 percent of water shed treated areas can be brought under irrigation. This indicates that 60 lakh hectares of area can be irrigated in the state as a whole. Very large part of water shed development treated areas of 126 lakh hectares were treated some years back causing much less availability of irrigable land in these water sheds. Of the 126 lakh hectares 31 lakh hectares cannot be considered as irrigated with full potential. These areas require rejuvenation. It would be difficult to consider any restructuring without proper comprehensive study of water availability. Except few watersheds water availability in all the watersheds has not been properly assessed and measured. It would be necessary to commence study based on stream gauging.

- 10.11.10** It is necessary to complete remaining works of water shed development in coming 10 years. This would necessitate additional fund availability in respective regions. The present funding norm of Rs.12,000 per hectare is inadequate. This norm is too insufficient for integrated water shed development. As per recommendations of Agricultural Finance Commission in 2006, it needs to be raised to Rs. 25,000 per hectare. Due to inadequate fund availability all of the necessary components of the work cannot be completed. Consequently, targeted and expected level of water storage is not accomplished. Completion of water shed area development treatments in the remaining 115 lakh hectares would result in 29 lakh hectares of additional irrigated area (which is 25 percent of 115 lakh hectares). These 29 lakh hectares will be able to raise 2 seasonal crops in a year. Adequate funds should be made available to the respective revenue divisions to complete these outstanding works in the next 10 years. In the regions of extreme water scarcity and deficit this program should be implemented on priority basis in next 5 years. There are few other benefits of water shed development e.g. increased moisture retention in the soil. 100 mm of additional water over 1 hectare would cause increased availability of 1000 cubic meters of water to crops microbial flora and plants. In the irrigation management and planning these benefits are not explicitly accounted due to lack of easy tangible observations and details.

Table 10.13
Region wise Requirement of Funds for Water Shed Development

Sr. No.	Region	Undeveloped Area	Funds Required (Rs. Crore)	Per Year Requirement of Funds (Rs. In crore)
1	2	3	4	5
1	Rest of Maharashtra	49.65	12412.5	1241.25
2	Marathwada	20.55	5137.5	513.75
3	Vidarbha	45.15	11287.5	1128.75
	Total	115.35	28837.5	2883.75

Source : 1) Information in Col.3 and Col.4 is supplied by Agricultural Department.
2) For Watershed Development works Rs. 25000 per ha rate is considered approximately.

10.11.11 For the completion of remaining water shed development projects provision of Rs. 25,000 per hectare should be made. The total requirement of funds by regions is presented in Table 10.13 These provisions would increase irrigation potential by approximately 29 to 30 lakh hectares. In addition to this, incomplete works also needs to be completed. We would need a detailed and separate programme for the completion of incomplete water shed development works. Water shed development stabilises and consolidates water availability for drinking water purposes as well. This is an important potent instrument against drought and famine conditions. Hence, in addition to the development of remaining and outstanding water shed development projects, separate programme for erstwhile yet partially completed water shed areas (126 lakh hectares) should be undertaken on urgent basis.

10.11.12 Administrative Structure

The policy approach and investment strategies in irrigation development need to be appropriately changed. It is not enough to plan for harnessing natural water resources and creating large water storages. This would not adequately solve the problem of water availabilities. It is necessary to simultaneously develop water sheds and farm ponds. Water Shed Development Organization, Water Conservation Department and Ground Water Departments need to coordinate among themselves and work in unison with each other. To achieve such coordinated effort, we need to have a functioning Land and Water Advisory Committee. However, this committee is at present inoperative. It needs to be activated and made functional. Such Advisory Committee can coordinate these works on hub and spoke model. It is necessary to improve the efficiency in use of irrigation and fertilizers and there should be a separate administrative mechanism and department for attaining these objectives. All these agencies together should expedite the completion of soil and water conservation works in next 10 years. There should be necessary provision of funds and regular agency to look after maintenance and repairs. Future prosperity crucially hinges upon water and soil. De-gradation of soils and water storage does not augur well for the future. Hence integrated regulation of all aspects, healthy coordination, quality consciousness and speedy implementation are the needs of the hour. Earlier there

was a separate mechanism for this purpose in the Soil Conservation Department. Present system needs to be appropriately amended on similar lines. There are several areas where natural sources of water are limited, extent of flow irrigation is deficient and scarcity of water is severe. In such areas watershed development works should be accorded highest priority and these works be completed in mission mode.

10.11.13 Following aspects deserve to be closely monitored for improving the effectiveness of Water Shed Development programmes.

- 1) Preparation of technically complete Water Shed Development reports by taking into confidence potential beneficiary farmers.
- 2) Treatment of water sheds primarily based on soil conservation concerns by taking into account type of soils, reliefs and slopes and rainfall.
- 3) Incorporation of new types of treatment based on new researches and improving the present practice of Water Shed Development treatments.
- 4) Implementation of Water Shed Development projects by the trained staff.
- 5) Optimal system for regulation, coordination and evaluation.
- 6) Development of relevant primary data base by villages, talukas and districts, for preparation of Water Shed Development projects.
- 7) Evolving location specific economic criteria for Water Shed Development and time bound implementation of the programme with the necessary funds available.
- 8) Determination of effective life of treatment of the water shed.

10.12 Ground Water Development : Status of Available Ground Water by Revenue Divisions in the State

10.12.1 Ground Water Survey And Development Agency prepares the estimates of Ground Water Availability on the basis of Water Shed Area. For this purpose, 3920 observation wells spread over 1505 water shed areas are monitored. The water levels in the shallow water holding rocks are observed (a) in May before monsoon and (b) in October after monsoon. Ordinarily, the ground water evaluation is primarily related to shallow water holding rock layers. Hence, water holding rock layers at higher depths are not presently considered. Estimation of ground water storage levels are presently undertaken on the basis of water shed areas. First such estimates of ground water were made in 1973 as a part of agricultural credit supply projects. Later in 1985 and 1990 as per the recommendation of the Committee on over exploited watersheds and corresponding directives of Union Government, and further recommendation of ground Water Estimation Committee, fresh and revised estimates were made. Later as per the recommendation of Ground Water Estimate Committee 1997, sixth and seventh round of re-evaluation of ground water was undertaken in March 2004 and 2007-08. Recently ground water evaluation report of 2007-08 has been published after due approval of Central Ground Water Board's Office at Nagpur and Principal Secretary, Department of Water Supply and Sanitation as per Notification of 13th November 2009.

10.12.2 Method for Estimation of Ground Water:

While assessing ground water availability, natural ground water recharge due to rainfall is considered in conjunction with water conservation, irrigation canals and other artificial ground water recharges. In the assessment and estimation of artificial ground water recharge details and data from agriculture, small irrigation and water resource departments are considered. This includes recharge due to water from canals. Similarly, extraction of water from wells, Bore wells, tube wells etc. for drinking water, irrigation and industrial use is also taken into account. For this purposes, data on wells are collected from different agencies (such as Department Of Revenue, Department Of Minor Irrigation, Department Of Agriculture, Maharashtra State Electricity Distribution Company, Department of Sanitation and Water Supply, MIDC) and taken into account. These data provide estimates of ground water exploitation. Data on rainfall are collected from Department of Meteorology, Government of India and Division Commissioners Offices of Government of Maharashtra. The details and data pertaining to area under crops irrigated from ground water are obtained from Department of Revenue as well as Department of Agriculture and are compared with the level of ground water exploitation.

10.12.3 Classification of Water Sheds By Ground Water Conditions

The Water Shed areas having more than 100 percent of exploitation and with the trend of diminishing ground water level are classified as 'over exploited' area. The water shed regions with 90-100 percent exploitation or the areas where either pre-monsoon or post-monsoon water levels have declining trend are classified as 'critical' areas. The areas with either pre-monsoon water levels with declining trend and 70-90 percent of ground water utilization are classified as 'semi-critical' areas. The areas with less than 70 percent exploitation and neither pre-monsoon nor post-monsoon water levels reflecting declining trend are deemed as 'safe water shed areas'.

- 1) Only 70% of Available Ground water can be used.
- 2) In Nagpur division 8000 cum per well draft is considered due to Metamorphic rocks.
- 3) In Rest of Divisions 15000 cum per well draft is considered.

10.12.4 Ground Water Status 2008-09:

Initially in 1980, 1508 water shed were demarcated. However for the purposes of their identification by districts the demarcation of these water sheds were revised and redefined. This resulted into upward revision of number of water sheds to 1531. As per the ground water evaluation, made in 2008-09, out of 1531 water shed areas 73 were over exploited, 3 critical and 119 were deemed as 'semi-critical'. As per this evaluation, net ground water availability through recharge is 33806 million cubic meters. Of these, 15913 million cubic meters of ground water is exploited and utilized for various purposes. Revenue Division-wise data on this aspect are presented in **Annexure 10.13**.

10.12.5 9 talukas out of 353 talukas of the state are included in the category of over exploited areas. These include Daryapur, Morshi, Warud, Chandurbhaga in Amravati District, Jalgaon-

Jamod in Buldhana District, Rahata in Ahmednagar, Raver and Yaval in Jalgaon District and Malshirus in Solapur District. Kavthe Mahankal taluka of Sangli District is included in the category of critical areas. There are 19 semi critical talukas. Annexure 10.13 presents Ground Water availability by districts.

- 10.12.6** As per the guidelines of Union Government, harvestable use up to 70 percent of Ground Water available is permissible. However, 82 talukas in the state indicate annual utilization exceeding 70 percent. These include 52 talukas in Western Maharashtra, 14 in Marathwada and 16 in Vidarbha. This clearly evidences regional imbalance in exploitation and use of ground water. Reasons are man-made as well as natural inadequacies. Ground water has a greater share than surface irrigation water. Hence it should be considered as a separate development indicator.
- 10.12.7** The regions of Western Maharashtra and Marathwada are less favourable or suitable due to nature of land surface, geological structure and unfavourable rainfall conditions. In these regions constrained and limited availability of surface water has resulted in greater dependence on and exploitation of ground water. In view of natural resource based imbalances, the ground water development policy should prefer 'water shed area' as an appropriate unit than the 'taluka as a unit'.
- 10.12.8** Such a view will be useful in designing appropriate ground water policy and reduce the regional imbalance.
- 10.12.9** Present data indicates that there are 1671524 wells with electrical pumps and 191397 sink wells in the state as a whole. In addition to this, there are 55331 wells for drinking water with electrical pumps, 103106 ordinary wells, 146739 hand pumps and 15182 electrical pumps. There are 800 official wells used for industrial utilization.

Table 10.14
Additional Wells for Ground Water Deficit Removal

Sr. No.	Regions	No. of Additional Wells	Funds Required (Rs. In crores)
1	2	3	4
1	Konkan	-	-
2	Nasik	12383	186
3	Pune	-	-
4	Aurangabad	28700	431
5	Amravati	18533	188
6	Nagpur	-	-
Total			805

Source : Provided by the water resources sub group of the committee.

- 10.12.10** The data in the above table indicate the number of additional wells with respect to ultimate irrigation potential available on wells. These estimates are based on Report of GSDA and Agriculture Report of GOM. We have indicated financial resources needed for this purpose which pertains to one fourth of this potential attainable in next five years.
- 10.12.11** Data collected on the basis of water shed areas are converted into taluka wise data which are in turn used for estimation of taluka-wise ground water availability and uses. The data on net recharge (total ground water availability) extraction for different uses (utilized potential) and ground water available for future irrigation use (residual potential) etc. are presented in the forthcoming sections.
- 10.12.12** As per estimates published by Ground Water Survey and Agency in 2007-08, there were 1867618 wells which provided ground water of 15.94 million cubic meters of ground water for irrigation. This suggests average of 8500 cubic meters of extraction per well. To prevent harmful depletion and promote efficient utilization in irrigation of the water from the wells it is necessary to have safe distance between the wells. Moreover, there should be greater dependability in per unit extraction. In Maharashtra, average extraction per well for irrigation purposes is expected to be 15000 cubic meters. In view of the economic feasibility for the farmers, banks disburse credit as per this norm. However, the data on actual use on number of wells and extraction thereof indicate that the unit extraction has fallen even below 10000 cubic meters.
- 10.12.13** The areas where bore-wells have been rising consistently the ordinary wells have begun to dry-up as early as November and December. Incidence of the proportion of such wells is very high in Latur and Osmanabad. Because of this simultaneously coupled with increasing density of wells day by day, in the 16 districts of the states (which have over-exploited and critical water sheds in large numbers) these problems have surfaced frequently and severely. As per technical criteria, the density of wells should be 8 wells per sq. Km in hard rock regions and 16 wells per sq.km. in silt based regions with optimal distance between the wells. Violation of these criteria would result in quick and early drying of wells and the rate of such drying is found to be rapidly going up.
- 10.12.14 Artificial Recharge of Ground Water**
- The rock pattern in Maharashtra has very limited capacity to retain water (Out of total rock availability by volume only 1 to 4 percent could be stored in hard rocks and 15 to 20 percent in sandy rocks). This possesses severe limitation on annual ground water availability. Data on annual rainfall that gets converted into ground water in the Maharashtra state is provided in Table -10.15

Table 10.15
Ground Water Conversion from Rainfall

Sr. No.	No. of Taluka	Percentage of Total Talukas	Conversion in to Ground Water (in M.)
1	2	3	4
1	1	0.3	>0.5
2	9	3	0.25 to 0.50
3	84	24	0.15 to 0.25
4	209	59	0.1 to 0.15
5	50	14	0.025 to 0.15

Source: GSDA Report 2008-09.

10.12.15 The Data in the Table – 10.15 above indicates very limited capacity and availability of ground water. In Maharashtra, 73 percent of the talukas have estimated ground water availability less than 1500 cubic meters per hectare. Therefore in the talukas having declining trends in ground water availability and extraction-rate in the range of 70 - 90 percent, the programme of artificial recharge of ground water should be undertaken. While implementing such programme, ground water situation and geological structure should be carefully studied. Ordinarily, it has been experienced that after completion of water shed development works, ground water availability improves in the sloping regions of the water shed. Similarly, the benefit is usually confined to 25 percent of the total area. At present, approved expenditure for undertaking water shed development works is Rs. 12,000/- per hectare. As argued in the previous section, the present limit needs to be raised to Rs. 25,000 per hectare, in order to accomplish full-fledged advantage of water shed development.

10.12.16 Rainwater harvesting should be attempted all over the areas as per scientific geological survey. Water shed and soil conservation development and ground water development works should be implemented with integrated approach. These works cannot be and should not be implemented on stand alone and ad-hoc basis. Due to lack of such integrated approach, it has been difficult to establish meaningful linkage between increased quantum of water due to development of the water shed and incremental need for ground water development. Moreover, electrification and other Infrastructure Networks should be developed and strengthened for well type and similar sources of water. Development of such power network infrastructure should be given priority in the areas primarily dependent on ground water use.

10.13 Uses of Water Other Than Irrigation

10.13.1 As per the census of 2011, 54.77 percent population lives in rural areas and 45.23 percent of total population lives in urban areas. Division-wise classification of total population in to rural and urban categories is presented in Table – **10.16** (Population By Divisions)

Table 10.16
Region wise Rural and Urban Population (2011)

Sr. No.	Region	Rural Population	Urban Population	Total
1	2	3	4	5
1	Konkan	15680383	12949129	28629512
2	Pune	12838634	10602364	23440998
3	Nashik	10171629	8399906	18571535
	Rest of Maharashtra	38690646	31951399	70642045
4	Aurangabad	10257187	8470561	18727748
	Marathwada	10257187	8470561	18727748
5.	Amravati	6170746	5095907	11266653
6	Nagpur	64280952	5308431	11736526
	Vidarbha	70451698	10404338	23003179
	Maharashtra	61545441	50827531	112372972

10.13.2 Rural Water Supply

At present water supply to rural population is made with the norm of 40 litres per capita per day. On the basis of data from Water supply department present supply of water and forecasted supply of water in year 2030 (assuming the norm of 40 litres per capita per day) is presented in Annex 10.14. [Note: Million cubic meters = mld x 365/1000]

10.13.3 This Annex clearly indicates that in the rural areas, even the present lower norm of 40 litres per day per capita is not being fulfilled. In particular the deficit in the Nashik Division is highest whereas the situation in Amravati Division appears much better than rest of the divisions. The present norm is evidently lower and needs to be revised 70 litres per day per capita. If we also consider the water requirement in the livestock of rural areas the norm should be set at 140 litres per day per capita.

In Annex 10.15 we present the required level of water-supply based on these norms for the population in 2011 and 2030.

10.13.4 Evidently, there is a very large gap between the present level of water supply (671 million cubic meters) and expected level of water supply (4151 million cubic meters). If we envisage improved standard of living in rural areas and also attend the needs of livestock adequately it would be necessary to augment the supply of water significantly and in large measure. In the coming future this gap should be addressed on priority basis. Such efforts to augment the supply of water will have to be substantially supported and financed from State Government Resources.

10.13.5 Urban Water Supply

Water supply department has informed us that urban water supply schemes are operated

through the local body governments such as Municipal Corporations and Municipalities of Grade A, B and C.

- 10.13.6** Number of Municipal Corporations and Municipalities by Revenue Divisions (excluding Mumbai and Mumbai sub-urban) are presented in Table-10.17.

Table 10.17
Region wise Number of Municipal Corporations and Municipalities

Region	Municipal Corporations	Municipalities (Category)			Nagar Panchayat
		A	B	C	
1	2	3	4	5	6
Konkan	8	2	6	15	5
Pune	5	3	10	28	2
Nashik	5	1	13	22	2
Aurangabad	4	2	10	38	3
Amravati	2	2	12	26	0
Nagpur	2	2	10	17	2
Total	26	12	61	146	14

Source : UD GOM

- 10.13.7** At present, Norm for supply of water of the urban areas has been 140 litres per day per capita. Presuming this norm the requirement for the years 2011, present deficit and requirement for 2030 have been estimated. See Annex 10.16.

10.13.8 Financial Requirements of Water Supply Schemes

Presently for the purposes of planning for urban water supply, norm of 135 litres per day per capita is applied for the schemes which are inclusive of sewage and drainage. For the schemes not inclusive of 'sewage and drainage' the norm of 70 litres per day per capita is being used. However, in view of improvements in the standard of living in the urban areas as well as better standard of development for mid-size cities, we recommend the norm of 140 litres per day per capita. The planning for next two decades should be based on the norm of 140 litres per day per capita.

10.13.9 Drinking Water Supply in Urban Areas

Evidently there exists very large supply gap in meeting urban water requirements. At present only 50 percent of the demand is being met with. The deficit and supply gap is particularly worrisome in Nashik, Aurangabad and Amravati Division. The supply gap in these regions deserves urgent attention. Many of the cities presently are supplied water once in a week or at best once every alternate day of the week. This evidences a large gap and requires immediate and urgent attention. Moreover, it would also be necessary to enquire into deficiencies in present water supply management.

10.13.10 As per recent Government decisions of 13/08/2012, capital expenditure norm for rural water supply have been revised. However, for the purposes of financial planning Maharashtra Jeevan Pradhikaran has applied approximate norm of Rs. 137 per cubic meter and Rs. 2000/- per capita. We have estimated the necessary financial provisions for meeting the present gap to fulfil the norm of 40 litre per day per capita and 140 litres per capita per day (inclusive of livestock requirements) for the year 2030. These estimates imply that Maharashtra Jeevan Pradhikaran would need 3113 crores to bridge the gap for meeting the norm of 40 litres per day per capita. In next 10 years, it would need Rs. 5600/- crores to meet the norm of 140 litres per capita per day (inclusive of livestock requirements) to be reached by 2030.

10.13.11 Urban Water Supply Schemes

Government of Maharashtra appointed a study group under Chairmanship of Dr. Sanjay Dahasahastra, retired Secretary Maharashtra Jeevan Pradhikaran. The TOR of this study group is required to study inter-alia 'Schemes and policies for abating the increasing the pollution of water resources and sources'. Report of this study group is yet awaited. However, till the report is finally published, in order to reduce the disparity across divisions, the present norm adopted by Maharashtra Jeevan Pradhikaran (namely 132 cubic meters or Rs. 6787 per capita) may be used to design the provisions for coming 10 years. Deficit and gap of water supply in Nashik, Aurangabad and Amravati Divisions is higher than other divisions. Hence, these divisions should be provided with funds as indicated in Table 19 on urgent and immediate basis. If we intend to bridge the gap of the present level of supply from the norm of 140 litres over next five years it would be necessary to spend Rs. 4000/- crores every year. In later nine years, the additional annual funds would be sufficient for keeping pace with the rising population.

10.14 Water Supply for Industrial Use

10.14.1 Department of Industries has estimated future expected industrial use of water in Revenue Divisions. At present due to concentration of industries in and around Mumbai, nearly 70 percent of industrial use of water has been concentrated in the same region. Due to relative abundant supplies of water from Konkan the needed water supply is seamlessly provided for and is not expected to face serious supply difficulties. Same is true of water supply provided for Mumbai city and Mumbai metropolitan region. However, we need to expand and augment recycling of sewage and drainage water on significant scale.

10.14.2 Among all divisions industrial use of water is lowest in Amravati Division and it is not expected to increase significantly and rapidly. However, this region as well as Aurangabad division scarcity and shortages of water are glaringly high. Hence, the industries to be located in these regions should have low intensity of water use and treatment of sewage and drainage water as well as recycling of existing uses of water should be made mandatory with appropriate incentives necessary in the respective divisions.

- 10.14.3** Demand for industrial use is expected to rise most rapidly in Nashik Division. This division is endowed with Godavari and Tapi river basin. However, both of these river basins are characterized by overall deficit of water. Therefore, emphasis on re-treatment and re-cycled use should be applied in the Nashik Division as well. Hence, while promoting industrialization in Nashik, Aurangabad and Amravati divisions treatment of sewage water and re-cycled, re-used of waste water deserve to be accorded special incentives.

Table 10.18
Industrial Water Supply

Region	Present Water Use		Water Use in Future		Total Water Use	
	MLD	Mcum	MLD	Mcum	MLD	Mcum
1	2	3	4	5	6	7
Konkan	1081.0	394.6	2424.6	885.0	3505.6	1279.6
Pune	207.1	75.9	862.4	314.8	1069.4	390.4
Nashik	83.3	30.4	992.1	362.1	1075.4	392.5
Marathwada	66.8	24.4	377.9	134.9	444.6	162.3
Amravati	10.1	3.7	59.8	21.8	69.9	25.9
Nagpur	45.5	16.6	675.8	246.7	721.3	263.3
Total	1493.8	545.3	5392.5	1968.3	6886.3	2513.9

Source : MJP & MIDC Report

- 10.14.4** If we consider the total demand for water for non-irrigation purposes upto year 2030, the volume indicated above does not seem too high when compared with the total water availability across different divisions. Even in the water deficit regions of Aurangabad and Amravati divisions non-irrigation demand for water does not exceed 3 to 4 percent of total use. However, storage necessary for meeting this demand of 3 to 4 percent of total use would be significant. If we take into account evaporation and distribution losses nearly 20 percent of the water storage needs to be reserved for these purposes. This would imply significant reduction in the quantum of water available for irrigation purposes. Hence, emphasis for re-treatment and re-cycle use of water for all non-irrigation purposes must be made mandatory. Such a re-use will not only reduce the drain on water available for irrigation but also result in significant reduction in pollution of rivers.
- 10.14.5** At present reservation of water for non-irrigation purposes derived from state level irrigation projects is as given in Table 10.19 below.
- 10.14.6** It would be interesting to compare Data in Table 10.19 and Annex 10.16 above. As per Annex 10.19, the expected demand in 2030 is estimated to be 6120 million cubic meters. However, the reservation already applied by Water Resource Department for current non-irrigation uses is 6995 million cubic meters and 8450 million cubic meters have been

reserved for future uses. Such unrealistic and pre-emptive reservation of water for non-irrigation purposes creates severe difficulties in the years with water shortage and deficit. This also creates misleading impressions about urban and industrial water supply in the public perception. Therefore, such reservation and actual water uses need to be administered on annual basis with greater attention paid to actual level of utilization. Such a monitoring and reservation may be delegated to Regional Development Boards as a part of their development responsibility.

As per recent Government decisions of 13/08/2012, capital expenditure norm for rural water supply have been revised. Those have been used for assessing the financial requirement.

Table 10.19
Water Use from Irrigation Projects

Sr. No.	Institution Using Water for Non-Irrigation Purpose	Approved No.	Quota in Mcum. Quota in Mcum
1	2	3	4
1	Gram Panchayat	2026	561
2	Municipalities/Nagar Parishads	159	530
3	Municipal Corporation	22	3050
4	MJP	313	520
5	Private Industries	325	364
6	MIDC	75	1146
7	Sugar Industries	134	115
8	MAHAGENCO (Thermal Power)	13	497
9	Private Thermal Power Stations(Running)	3	12
10	Private Thermal Power Stations(Planned)	64	1455
11	Other Industries(Agro-Industries)	26	45
12	Other Institutions (Educational, Religious, Defence, Airport, Railway, & Central Govt. Organizations)	31	155
Total			8450
Total (Excluding projects yet to be started)			6995

Source : Irrigation States Report, GoM.

Table 10.20
Water Use for Different Purposes

(Mcum)

Purpose of Water Use	Year 1996	Year 2030
1	2	3
Drinking Water		
A) Urban	1705	4240
B) Rural	1062	1943
Total	2768	6184
Animals	746	998
Irrigation		
A) Surface Water	24093	69161
B) Ground Water	7252	20501
Total	31345	89662
Hydro-Power	3112	3112
Thermal Power	272	4952
Industries	1241	3254
Total Water Use	39484	103705

Source: Maharashtra Water and Irrigation Commission (GOM)

10.15 Health

10.15.1 The problem of rural and urban water supply is intimately linked with the problem of health. The Table -10.21 below presents data on water borne illness and diseases in last three years.

Table 10.21
Water Borne Diseases

Disease	2007-08	2008-09	2009-10
1	2	3	4
Cholera	9269	5566	20715
Gastro	221063	170205	229203
Diorrhea	1591031	1775190	1623357
Viral Hepatatis	16473	9735	8205
Typhoid	82086	87809	124662
Total	1919922	2048505	2006142

Source: Present Status of Health, Maharashtra, 2010, Maharashtra State, Health Survey and Research Centre.

10.15.2 It means 2 percent of Maharashtra Population suffers from contaminated water. These disorders are pre-dominantly diahorrea (80 percent and more) and gastro (8 to 11 percent).

- 10.15.3** Preventive measures have to be carried out to control the expenditure and other concomitant losses arising through water borne diseases. It is estimated that at least 200 crores worth of expenditure is being associated with water borne diseases. Every care should be taken to ensure that both urban as well as rural water supply schemes deliver pure and uncontaminated water.
- 10.15.4** It is necessary to enforce the standards of quality of water as set by WHO (World Health Organization). This would require establishment of centres for assessing quality of water in proportion to the size of population in given location. We need to have and develop necessary technology, skilled manpower with technical competence for this purpose.

10.16 Water Pollution

- 10.16.1** Increased industrialization and urbanization in Maharashtra has exacerbated the problem of water pollution in various places. Untreated industrial waste water and sewage waters from the urban areas are the two major sources of pollution. Contamination and pollution of surface as well as ground water has been on rise. For this purpose, drainage of polluted water through rivers, rivulets, streams, and nahllas should be forbidden and enforcement of rules and regulation concerning quality of water must be strengthened.
- 10.16.2** **Treatment of Sewage and drainage water and Recycling of Water:** Annex 10.17 describes the present condition of treatment and re-cycling of sewage and drainage water by Revenue divisions.
- 10.16.3** The data in this Annex clearly indicates that most of the re-used, re-cycling schemes are non-operative and defunctional. The problem of recycled use should be addressed with special focus and urgency. 22 Municipal corporations in the state generate 5583 million liters of waste water per day. It is necessary to process at least 75 percent of this water. However, the projects and schemes of treatment and re-cycling have not been completely planned and prepared. Consequently, any meaningful estimation of financial needs by Revenue Divisions seems difficult. However, as a thumb rule the (per capita) cost of drainage and cleaning of sewage is often equal to cost of per capita supply of water. Therefore, it would be prudent to commence the work on these schemes at the earliest so that in coming ten years the facilities of treatment and re-cycling would be ready and complete together with the schemes of Water supply and remedy the present deficiency by 2030.

10.17 Governance of Water Resources

- 10.17.1** Government of Maharashtra has implemented Maharashtra Water Resource Regulatory Authority Act, 2005. This Authority would be instrumental in achieving equitable distribution of water available from and within different river basins. It would also enable equitable distribution of water for irrigation, drinking water needs and industrial uses. This authority has also attempted to establish certain coherence in different rates of water charged for different uses. However, this regulatory authority has not adequately attended

the problems of qualitative and quantitative management of water. Government of Maharashtra needs to provide formal instruction for taking up such problems of water management. In absence of such policy guidance well coordinated and full-fledged water management may not assume necessary shape and system.

- 10.17.2** For optimal and need based utilization of irrigation water available from the projects, Water User Association (WUA) are being formed canal and distribution channel-wise and management of water in the designated area is being handed over to WUAs. This arrangement relieves the Government administration of the burden of responsibilities in distribution of water as well as recovery of water charges from individuals. WUA are delivered water at the receiving gate of the distribution canal on volumetric basis. The collection of water charges for the water used by the members of the WUA is recovered from WUA on collective basis. WUA are responsible for maintenance and repairs of the distribution channels and are given financial assistance for expenditure on maintenance and repair works. It would be desirable to create as many WUAs as necessary and transfer entire command area benefiting from irrigation to such WUAs for the purposes of management of distribution of water. Government administration must attend to this requirement seriously.
- 10.17.3** This is one of the huge task which CADA in the command area would be required to complete in coming Five years.
- 10.17.4** Officials and the staff of the Government Departments should attend and participate the meetings of WUA and assist them in solving their problems and difficulties.
- 10.17.5** In order to assure adequate supply of Ground water for different purposes and by different classes of users as well as for protection and conservation of public sources for drinking water, there should be collective participatory management system of ground water, nurturing conservation and utilization. In that direction, it will be helpful if the provisions of the Act No 42/2009 approved by the Legislature unanimously in Dec. 2011 are given effect immediately.

10.18 Contribution of Water in Achieving Development

- 10.18.1** It is a well-recognized fact, among public as well as policy makers, that adequate and appropriate availability of water plays fundamental role in the economic development. However, there are no credible and comprehensive data on different aspects of water views such as economic value of different uses of water, crop pattern under irrigated area or its contribution to overall social development including employment and per capita income etc. The sub group of the committee therefore, decided to conduct a comparative study of villages with and without irrigation in order to gauge economic value and significance of water.

- 10.18.2** For this purpose, from each of the six revenue divisions, a village with irrigation facility and village without irrigation facility were selected. Average total annual income of the farmers of the villages with irrigation were estimated and compared with average total annual income of the farmers of the villages without irrigation. The results of the survey suggest a significant increase of income due to irrigation. On the average income of irrigated farmers was 2 to 4 times more than the income of un-irrigated farmers.
- 10.18.3** This study also indicated that irrigation causes rise not only in agriculture income but several non agricultural work opportunities are spurred due to availability of irrigation and the income from such non agricultural sources of work results in supplementary and stabilization effect to agricultural income.
- 10.18.4** If we compare an average income of different districts in 2011, ability to raise significant rise in income through irrigation alone was evidenced in Nagpur and Nashik Divisions. In absence of time-series data it was not possible to estimate growth rates of productivity and economic development from this study. However, considering the gestation periods of 5 – 10 years in the irrigation projects and capital expenditure requirement of Rs. 3 lakh per hectare the priority accorded to irrigation projects in the development strategy seems justified.

10.19 Special Recommendation for Balanced Development

- 1) Per capita water availability and per hectare availability should be used as the indicators for measuring disparities among regions. The earlier criterion of financial backlog should be replaced by this indicator. Allocation of funds for removing regional disparities should be made on the basis of the indicator mentioned above. (i.e. per capita water availability and per hectare water availability). Achievement of overall development would be extremely difficult in those areas where water availability per person is less than 500 cum. In view of such grave circumstances meticulous and sparing use of water as well as recycling and reuse of water should be emphasized and promoted. Aurangabad and Amravati divisions deserve to be carefully monitored in this manner.
- 2) Actual storage and actual irrigation should be adopted as appropriate measure and indicator for measuring irrigation department. On the basis of this indicator the deficit in Nagpur, Amravati and Aurangabad division should be eliminated on priority basis. Special funds for removal of such deficit induced imbalance should be allocated to these divisions.
- 3) Water Shed Development Works should be given highest priority in drought prone areas. In all the regions that have less irrigation potential and limited natural water availabilities, water shed development works should be completed in coming 5 years on priority basis.
- 4) Government should assess the supply gap and deficit in rural (inclusive of live stock requirements) and urban water schemes on the basis of the suggested norm of 140 litres per capita per day. To eliminate this deficit Government should undertake a special programme for rural water schemes and in particular drought prone area schemes. These should be completed in coming 10 years.

We summarize below those elements which require specific and special effort for achieving balanced regional development.

- 5) All the irrigation projects in the state which have the forest density of less than 0.5 be considered separately and Hon'ble Governor be requested to grant special permission for completion of these projects and such Water storage projects should be completed on priority basis.
- 6) Presently, cost of land acquisition, cost of displacement of forest and wild life on NPV basis is required to be paid out of the regional allocation made for irrigation. In other words, these costs are taken as a part of project cost. In case of drinking water supply schemes/ projects the condition of NPV cost is relaxed. The irrigation development projects should also be considered eligible for similar relaxation. In Vidarbha region a very large number of projects are closer to forest area and their economic viability are adversely affected because of the NPV conditionality.
- 7) Amravati and Aurangabad divisions have very large deficit as per the indicator of water storage. Hence Government should expedite the approval of all the local small irrigation projects between 250 to 600 hectares and reconsider several terms and conditions pertaining to environmental clearances.
- 8) In last ten years several irrigation projects of storage and distribution have been completed. Data from these past experiences should be closely scrutinised and the norms of the projects on per hectare and per cubic meter basis should be reassessed. These norms are likely to be widely different across divisions. It would be inappropriate to apply a single common norm across all divisions. In Particular, the basins with extreme relief and slopes and difficult terrains such as Konkan need to be considered separately and distinctly. Similarly, deep black soil, *Kharpan Pattas*, soil of Amravati divisions and forest zones of Nagpur Division are required to be treated on differential footing and be subjected to distinct norms.
- 9) Hence forth, distribution system in all major, minor and small projects should be designed on the basis of closed pipe lines and present practice of open canal distribution should be gradually abandoned. This will reduce distribution and transmission losses of water. In particular, for drought prone areas and Konkan region with hilly high relief regions and regions with deep black soils such systems need to be adopted immediately.
- 10) At present irrigation potential and irrigation utilization is measured on the basis of cropped area serviced. This needs to be replaced by the measurement of actual cultivated land by irrigation. This will reflect the actual conditions of irrigation facility more realistically.
- 11) There is a greater urgency in promoting thrifty and parsimonious use of water in Aurangabad and Amravati divisions. In these divisions project design and system should be improved and modified to promote the new water saving micro irrigation technologies (e.g. drip irrigation, sprinkler irrigation). Such modifications and improvement related projects should be undertaken immediately which will help ameliorating the present scarcity ridden condition.
- 12) The Government policy aims to transfer management of irrigation systems to its beneficiaries. However, by the end of June 2010 only 11.6 lakh hectares out of 47 lakh hectares were transferred. (i.e. 24.5 percent of the irrigated land). Social and collective participation in

management of projects is an important indicator of development and management efficiency. We recommend a special programme aimed at improving efficacy in use of water through creation of WUAs and their strengthening on urgent basis.

- 13) All non-irrigation uses of water should be subjected to recycling and reuse requirements on mandatory basis.
- 14) Priorities in the water use should be as follows – (i) Drinking water (ii) Irrigation (iii) Industrial use. Plans for integrated comprehensive development of water basin should be completed in coming 5 years on urgent basis and MWRRA should prescribe equitable distribution of water in such comprehensive design.

10.20 Proposed Indicators of Development on the Basis of Water

10.20.1 In addition to surface water, ground water is being increasingly used for irrigation and non-irrigation purposes. Utilization of ground water is primarily through wells, tube wells and necessary equipment for pumping of the water. Hence, ability to tap and exploit ground water should also be considered as a separate indicator of development.

10.20.2 Three more elements may be additionally considered. (A) Proportion of the irrigation service to the command area. (B) how many water user associations are effectively operative? and (C) How many small water sheds have been treated with water shed development programme?

The committee found that there are severe gaps and controversies in the definitions, data and estimates of deficits in three regions. Since these couldn't be resolved to our satisfaction, we decided to use the current questionable data and estimates of the Water Resources Department as provisional estimates, but to limit our allocation of funds only to a part of it, to be completed in the eight years. A separate independent group should be appointed to verify the data and make complete estimates of equitable distribution in the next 5 years.

10.20.3 Financial Provisions for Balanced Development

10.20.3.1 Component - 1. On the basis of deficit in the irrigation potential developed (for state sector and local sector): if we measure deficit of every district from the state average of 21.01 percent of total cultivable area as irrigated area and multiply the deficit percent of hectareage of cultivable area by Rs. 3 lakhs per Ha, the resultant amount may be considered as funds necessary for reaching average proportion of irrigated area of gross cropped area. This amount works out to be Rs. 26778 crores (Refer Annex 10.18). The state average of 21% is only based on the state sector projects, while the sentence above says - use the state + local sector.

For development of Water Shed Area it would be necessary to provide Rs. 25,000/- per hectare. This would imply provision of Rs. 28838/- crores for water shed development programme. Similarly, on the basis of the cost-

norm of Rs.1.5 lakh per well, development of ground water would need Rs. 7533/- crores for removal of the deficit in number of wells.

Table 10.22**Water Storage Developed Per ha. of CCA**

Sr.No.	Region	CCA	Water Storage Developed Water Resources Department	Local Sector Department	Total Storage	Cum/Ha Col.6/3) x 106/105)
1	2	3	4	5	6	7
1	Konkan	17.93	3501	431	3932	2193
2	Nashik	40.16	4474	3111	7585	1889
3	Pune	45.56	10228	1915	12143	2665
	Rest of Maharashtra	103.65	18203	5457	23660	2283
4	Marathwada	59.3	7507	2279	9786	1650
5	Amravati	35.62	2969	781	3750	1053
6	Nagpur	26.85	4705	648	5353	1994
	Vidarbha	62.47	7674	1429	9103	1457
	Maharashtra	225.4	33385	9165	42550	1888

Source : Provided by the water resources sub group of the committee.

10.20.3.2 Component 2: On the basis of storage of water

Data in the Table No. 10.22 indicates that Marathwada and Amravati lack behind in the average storage for the state as a whole. This deficit needs to be eliminated on priority basis and appropriate funds needed for this purpose are given below in Table No. 10.23.

Table 10.23**Funds Required for Storage Capacities**

The deficit for Aurangabad and Amravati has been calculated as follows:

Storage Average	Cubic meters per hectare	Difference
1	2	3
Maharashtra Storage Average (cubic meters per hectare)	1888	-
Aurangabad Storage Average (cubic meters per hectare)	1650	238
Amravati Storage Average (cubic meters per hectare)	1053	835

Source : Provided by the water resources sub group of the committee.

10.20.3.3 Total cultivable area of Aurangabad and Amravati Division are 59.3 lakh hectares and 26.5 lakh hectares. Thus, the additional storage needed for

these two regions would be $238 \times 59.3 \times 10^5 / 10^6 = 1411.34$ million cubic metres for Aurangabad and $835 \times 26.85 \times 10^5 / 10^6 = 2974.27$ million cubic metres for Amravati. Average cost of building up 1 million cubic metre of water is Rs. 5.4 crore. Hence, Aurangabad would require $1411.34 \times 5.4 =$ Rs. 7621.23 crore and Amravati would require $2974.27 \times 5.4 =$ Rs. 16061.05 crore. The total would be Rs. 23682.28 crore.

10.20.3.4 This financial provision refers to removal of deficit in the storage capacity created alone and does not include cost of other components of irrigation projects such as canals, distribution channels, 'chaaree's etc.

10.20.4 Among above components indicated the deficit in storage is not based on any indirect estimate or guesstimate. Hence, the difference on the basis of storage capacity across regions is a more realistic and a tangible measure. Hence, for the purposes of financial provision on priority basis this component should be considered first.

10.20.5 As the natural storages across regions start improving and approach the natural availabilities, the regions with lower rainfall will reach a stage where further growth could not be possible (for e.g. Nashik and Amravati division in the Tapi basin). In such circumstances greater water saving techniques and devices (e.g. micro irrigation, green house technologies, water recycling and re-use) will become more important and further development would be rendered feasible only on the basis of such technological alternatives and options. It may be noted that all the three principle uses of water namely irrigation, drinking and other civil uses and industrial uses, all of them afford enough scope for stringent economic use and options of saving water. But these are relatively costly for every cubic meter of water to be supplied. It may be advisable to expand on the conventional basis first say in coming ten years and establish method of water storage, distribution and use. That would have spread the benefit over extensive areas as conventionally feasible. When the limit of such extension will approach closer to feasible storage, the later expansion of development will inevitably adopt the techniques aimed at greater saving, greater efficiency and more frequent re-course to re-use and re-cycling techniques. Else, it would hike expensive techniques and methods on limited service areas. It is for this purpose we have not recommended any indicators for efficient and economic uses and financial provisions required for these purposes, at this stage.

10.20.6 Moreover, we believe and prefer greater emphasis on water shed development and ground water re-charge to more advanced and more expensive alternatives. We believe the regions should reach the ultimate potential as provided by natural endowments duly supplemented by water shed development and ground water re-charge. Once, such a potential is nearly reached then further development will naturally evolve and absorb more efficient but more expensive techniques.

10.20.7 It would not be prudent and advisable to allocate the entire financial capacity for the

lagging regions alone and allow other regions to stagnate. Hence, we have taken a mixed path of maintaining growth across all regions and at the same time accelerating growth in the lagging regions lot more than in the already developed regions. Apart from the indicators such as storage and distance from state average of irrigated area as a proportion of cultivable area, we have also considered region specific constraints and needs for acceleration of growth. For a variety of reasons the irrigation potential in Nagpur region has not been sufficiently planned and articulated. This is equally true for Konkan region also. Once such unexplored potential is articulated and converted into viable proposal these regions would be able to grow and plan for the future much better than in the past. For these two regions, the ultimate goal should not be merely to reach the state average but to reach to the highest level permitted by the availability of water (natural or the Tribunal award) and by the techno-economic feasibility. This goal must be planned for in the next five years, and achieved in the subsequent 8 years. In case of Marathwada potential in terms of natural endowment is limited though more or less completely planned for. For acceleration of irrigation and water based development this region should be able to realize its available potential at the earliest and financial resource constraint should not impede realization of future potential. The allocations that we have indicated are, therefore, not exclusively based on the indicators alone but also take into account the region specific urgent needs as well.

10.20.8 We have given greater priority and emphasis for elimination of deficit. We have considered water shed development and recharge of ground water as a part of immediate priority. Once, the region approaches a comparable level of development and deficit is significantly lessened further future allocations may be based on different criteria and basis. When the imbalance is completely eliminated, future development expenditures may be based on share in population and net cultivable area. Different regions have different natural endowments of water. On the one hand, some of the regions will have reached and exhausted their availability and some regions will continue to have surplus water resources. But this would happen in the later third stage of development. In such condition, other option such as conservation of environmental flows large, scale transfer from one basin to another, river linkages may examined only after certain preconditions are met. Similarly, more advanced water saving techniques such as reducing evaporation would also become more relevant.

10.20.9 Our Approach to the question of irrigation development in lagging regions has been different from the earlier policies. As argued earlier, we have made notable and important departures. Firstly, we have taken the water storage capacities of the regions as a more meaningful indicator for water resources. The capacity to store water needs to be maximised and the projects, that shape the size of the storage should be completed at the earliest. So far, developmental deficit was measured on the basis of distance from state level average percentage of irrigated area to total area. This indicator has intrinsic limitations. Application of such a distance based ratio may be infeasible in some regions due to non availability of either available land or natural availability of water. This

problem becomes more acute when the state average moves upward. However, to the extent, this indicator provides a meaningful gap we have retained this for immediate period of five to seven years. Konkan and Nagpur are the two regions with better water endowments where this criterion may still be sensibly applied. Similarly, Amravati division has a huge deficit on this indicator for which we have given high priority in the resource allocation in the next 8 years.

- 10.20.10** While computing the development gap and deficit we have also taken into account two different layers of potential. (a) The potential of the region that has already been identified articulated and planned in the proposed and ongoing projects. (b) Due to a variety of difficulties the potential in some of the regions has not been planned and defined. This includes some of the restoration works that may add to existing potential. If the nature of hurdles, which have affected the planning of such harvestable potential, are removed then such a 'deficit in planning' could be overcome. Typically in Nagpur region, due to forest reservation and environmental clearances, a large potential has remained undefined and not yet articulated in form of the planned projects. Considering a typical life cycle of project planning and implementation it may be possible to accelerate such a process of planning in coming five years. We have thus proposed resource allocation for these purposes as well.
- 10.20.11** Our proposal for eliminating developmental disparities in water resources are therefore guided by different considerations simultaneously. Adoption of storage as the prime measure of developmental deficit, acceleration of existing and ongoing projects, urgent completion of distribution networks, better irrigation management through CADA, accelerated pace of water shed development projects, revival of traditional water storage bodies and special and differential treatment of the regions with difficult geological structure are handled separately so as to address location specific problems. In addition as argued in Chapter on Approach, drinking water availability in rural and urban areas is considered as 'public good' and it would be made available in all the regions on the basis of pre defined norm. In the table below we show our estimates of financial resources needed to establish development parity among the regions.
- 10.20.12** It may be noted that the most water deficit regions of Aurangabad and Amravati divisions are required to receive funds for creation of storage. On the other hand, Nagpur and Konkan region need to accelerate a realization of established irrigation potential. Hence, allocation for these two divisions has been made to achieve higher percentage level of gross irrigated area to total area. Aurangabad division has a limited potential and has already been more or less completely planned. It is necessary to complete the projects in Aurangabad division at the earliest. Hence, we have proposed additional allocation of 30 percent of the cost of outstanding works in next five years. Similarly, for accelerated completion of distribution networks, Nashik and Pune division should receive additional 15 percent of outstanding work in next five years. On the other hand Amravati and Nagpur divisions would receive 35 percent of outstanding works as additional earlier allocation

for definition and accelerated completion of project potential. The estimates of ongoing, pending and outstanding works were provided by Department of Water Resources, Government of Maharashtra.

10.20.13 As explained in the footnotes to the table the provisions for the different aspects of water resource development and financial provision needed are indicated by regions. It may be observed that the total financial provisions suggested may be broadly divided in Irrigation related allocations (Items as per row no.1, 2, 3, 4 and 5) and Drinking and other water uses (Item in row 6,7,8,9and 10). As per the provisions and allocations suggested by us the Share of Vidarbha in Irrigation development is highest i.e. 48.12 per cent whereas the share of Rest of Maharashtra is 31.72 per cent. We may note that the shares exceed the share of population and also share of cultivable area in Vidarbha. It may also be noted that the share of regions in the drinking water supply are approximately proportional to the population. This reflects our norm based approach of equalisation in drinking and other daily uses of water needs. If we consider the share of each region in the total provisions for water resources (i.e. Irrigation and drinking water and industrial uses) they are 42.32, 20.81 and 36.86 for Vidarbha, Marathwada and Rest of Maharashtra respectively.

Table 10.24
Proposed Fund Allocation for Removal of Development Deficit in Water Resources

Sr. No.		Classifi- cation	Konkan	Nashik	Pune	Aurangabad	Amravati	Nagpur	Maharashtra
1	2	3	4	5	6	7	8	9	10
1	Irrigation								
	a) Water Storage basis	A	0	0	0	7619	16060	0	23679
	b) Devt of Irrigation potential	A	10320	0	0	0	0	6332	16652
	i) percentage of balance cost of ongoing projects for accelerated completion of projects and utilization of irrigation potential	B	0	2143	2627	3496	894	4432	13592
		Total	10320	2143	2627	11115	16954	10764	53923
2	CADA Works	A	430	2207	394	3079	1418	1382	8910
		Total	430	2207	394	3079	1418	1382	8910
3	Water Shed Development	A	0	273	0	0	1753	0	2026
		B	2673	3245	6220	5138	4945	4588	26809
		Total	2673	3518	6220	5138	6698	4588	28835
4	Restoration of Maji Malgujari Tanks	A	0	0	0	0	0	2520	2520
		Total	0	0	0	0	0	2520	2520

Sr. No.		Classification	Konkan	Nashik	Pune	Aurangabad	Amravati	Nagpur	Maharashtra
1	2	3	4	5	6	7	8	9	10
5	Ground Water	A	357	0	0	0	0	2662	3019
		B	0	186	0	431	188	0	805
		Total	357	186	0	431	188	2662	3824
6	Rural Water Supply	A	706	706	661	564	154	321	3112
		Total	706	706	661	564	154	321	3112
7	Urban Water Supply	A	4343	2086	4594	5280	3128	1993	21424
		Total	4343	2086	4594	5280	3128	1993	21424
8	Highly Water stressed Talukas	A	0	531	767	450	50	0	1798
		Total	0	531	767	450	50	0	1798
9	Talukas of unfavourable strata	A	724	258	243	290	59	158	1732
		Total	724	258	243	290	59	158	1732
10	Water supply scheme for saline area	A	0	0	0	0	542	0	542
		Total	0	0	0	0	542	0	542
Total Maharashtra		A	16880	6061	6659	17282	23164	15368	85414
		B	2673	5574	8847	9065	6027	9020	41206
		Total	19553	11635	15506	26347	29191	24388	126620

Source : Provided by the water resources sub group of the committee.

These are provisional estimates. Hence the allocations have been made only for 8 years.

Table 10.25
Shares of the Regions in Total (Irrigation plus Non-irrigation Development)
Financial Provisions Concerning Water Resource

1	2	3	4	5	6	7	8
Total (Irrigation plus Non irrigation Development)	Rest of Maharashtra	46666	Marathwada	26347	Vidarbha	53579	126592
Regional Share (Percentage)		36.86		20.81		42.32	100

Source : Provided by the water resources sub group of the committee.

Table 10.26
Shares of the Regions in Financial Provisions Concerning Irrigation Development

Sr. No.	Classification	Konkan	Nashik	Pune	Aurangabad	Amravati	Nagpur	Maharashtra
1	2	3	4	5	6	7	8	9
Irrigation Development	A	11107	2480	422	10698	19231	12896	56834
Sector 1, 2, 3, 4 & 5	B	2673	5574	8847	9064	6027	9020	41205
	A + B	13780	8054	9269	19762	25258	21916	98039
Irrigation Development	Rest of Mah	31103	Marathwada	19762	Vidarbha	47174	98039	
Regional Share (Percentage)		31.72		20.16		48.12	100	

Notes: A - Provisions proposed on the basis of deficits/urgency
 B - Other special provisions for acceleration of development.

Table 10.26 A
Shares of the Regions in Financial Provisions for Drinking Water

Sr. No.	Classification	Konkan	Nashik	Pune	Aurangabad	Amravati	Nagpur	Maharashtra
1	2	3	4	5	6	7	8	9
Drinking Water Sector	A	5773	3581	6265	6584	3933	2472	28608
6,7,8,9 & 10	B	0	0	0	0	0	0	0
	A + B	5773	3581	6265	6584	3933	2472	28608
Non Irrigation Development	Rest of Mah	15591	Marathwada	6584	Vidarbha	6405	28580	
Regional Share (Percentage)		54.55		23.04		22.41	100	

Source : Provided by the water resources sub group of the committee.

Explanatory Notes for funding as Indicated in the above Table 10.24

10.20.14 Irrigation: The committee derived deficit in all the components of water sector and the funds required for deficit removal are shown in Annex 10.34.

Committee requested Water Resource Department, Government of Maharashtra to furnish information on cost of balance work of the projects in each Irrigation Development Corporation. Water Resources Department has provided region-wise cost of the balance work of the project as follows:

Table 10.27
Cost of Balanced Work of State Sector Irrigation Projects (Rs. Crores)

Corporation	Konkan	Nashik	Pune	Aurangabad	Amravati	Nagpur	Total of Corporation
1	2	3	4	5	6	7	8
KIDC	4450	0	0	0	0	0	4450
TIDC	0	10603	0	0	0	0	10603
MKVDC	0	18	17514	317	0	0	17849
GMIDC	0	3664	0	11336	0	0	15000
VIDC	0	0	0	0	17880	12664	30544
Total:Revenue Division	4450	14285	17514	11653	17880	12664	78446

Source : Water Resource Department

10.20.15 Considering the cost of balance work and various needs stated below, the certain percentage of balance cost is kept in classification B. funds required in class B are also purposed to utilise in first 5 to 7 years along with deficit removal.

- Funds required for deficit removal are much more than balance cost in Konkan region.
- Although Nashik& Pune regions are ahead in irrigation sector, to keep the pace of development of particular talukas in these regions which are lagging behind, 15% of balance cost is kept in class B, for each region.

10.20.16 Aurangabad region is the highest deficit area in water sector. For having extensive irrigation benefits on larger area of this region, Change in cropping pattern and paradigm shift in water utilisation techniques 30% of the balance cost kept in addition to deficit removal is proposed. The amount of deficit removal is about 80% of the balance cost in Amravati region hence nominal 5 % amount is kept for class-B. The 35% of the cost of balance work is proposed to accelerate the projects, in Nagpur region.

10.20.17 Watershed development: Watershed development is proposed to be accelerated and completed in next 5 to 7 years hence total funds required for watershed development i.e. Rs. 28835 crore kept to complete the work.

10.20.18 Ground water: The deficit in ground water is only Konkan and Nagpur region. to keep the pace of development in Nashik, Aurangabad & Amravati region 25% of amount of total works is kept in class-B.

10.21 Summary and Concluding Remarks

10.21.1 In the coming decades, demand for water is likely to get further diversified and widened in many more activities. The progressive and industrially advanced state like Maharashtra

should envisage emerging increased demand for water resources more carefully and plan for the same at the earliest. Apart from the norm based priorities such as drinking water and protective irrigation State Government should care to evolve and shape the emergence of well tempered and enlarged regulated market for water. All the uses of water should be judicious with emphasise on water saving technologies to be extensively promoted incentivized and practiced. Except for few selected uses such as drinking water and protective irrigation the beneficiary should be persuaded to bear the cost of harnessing, storing and using water. Growing urban and non agricultural uses of water should be increasingly mandated to adopt re-use and re-cycling of water as far as possible. Further evolution and development of socially acceptable functioning of market for water is one of the important challenging task for policy makers. In our report we have underlined the need for long term vision and planning for scarce water sources. In the initial stages the focus should be on enlarging and strengthening storage capacities to the ultimate available potential. Nagpur, Konkan and Amravati divisions will receive the high priority. The Government of Maharashtra should begin the allocation and deficit removal as the urgent tasks based on these recommendations. But in view of the unresolved issues of definition, data and the estimates of deficits, an independent expert group or the Maharashtra Water Resource Authority be asked to verify and develop new long term estimates for the period beyond five years. In the immediate period harnessing available potential of storage should be the priority in planning and provision of resources. In particular the water stressed regions should be given higher priority in harnessing such potential. In the later years, wider dissemination of water saving and water recycling technologies will assume even greater emphasis.

Table 10.28
Summary of Recommendations on Water

Priority	Para No.	Recommendation
1	2	3
1	10.13.3	For rural as well as urban areas minimum availability norm for water should be 140 liters per day per capita. For rural areas 140 liters is inclusive of water needs of the livestock.
2	10.11.10	The present financial provision for development of water shed is inadequate. It should be upgraded and made equal to Rs. 25,000/- per hectare. The water shed development programme should be completed in coming 10 years. Total necessary financial provision for Water Shed Development would be Rs. 28837.5 crores. In the regions of extreme water scarcity and deficit, this programme should be implemented on priority basis in next 5 years.
2A	10.11.12	There are several areas where natural sources of water are limited, extent of flow irrigation is deficient and scarcity of water is severe. In such areas water shed development works should be accorded highest priority and these works be completed in mission mode in coming 5 years.
3	10.20.4 10.19.2	Actual irrigated area and storage should be considered as development indicator.
4	10.12.16	In order to ensure stable access and use of wells and similar sources, infrastructure net work of power supply should be created. Development of such power net work infrastructure should be given priority in the areas primarily dependent on groundwater use.

Priority	Para No.	Recommendation
1	2	3
5	10.9.6	Development of Irrigation in Khandesh
	10.9.9	<ul style="list-style-type: none"> • Tapi River basin is the 'deficit river basin' in terms of availability of water. Maharashtra's surplus share of Narmada Waters should be utilized in this deficit basin. • Water Shed Development Programme should be implemented as an urgent priority. • For undulating terrains distribution of water should be through pipelines.
5	10.9.4	Development of Irrigation in Amravati Division
		<ul style="list-style-type: none"> • Per capita and per hectare availability of water is far too less in this division. Hence waters from Wainagaga sub basin be considered for diversion to water deficit area in Godavari Sub basin after providing adequately for the requirements of the donor basin also. • This area is characterized by deep black soils and 'Khar pan patta'. Technical and economic project criteria for this region should be changed. • There is abundant scope for farm-ponds and micro-irrigation. • Implementation of integrated water shed development would be necessary. • It is necessary to remove the deficiency in distribution of irrigation water. • Distribution of water should be through closed pipelines in the deep black soil regions.
5	10.9.15	Development of Irrigation in Western Maharashtra.
		<ul style="list-style-type: none"> • For permanently water scarce regions lifting of water at higher heights should be considered as a special case and watershed development should be given high priority. • For hilly regions, distribution of water should be through pipelines.
5	10.9.3	Development of Irrigation in Konkan
		<ul style="list-style-type: none"> • Due to hilly undulating terrains distribution of water through pipelines should be made wherever necessary. • Geological structure in many parts of this region mostly consists of laterite rocks. We need research in exploring the options for water storage in such geological conditions. • There are frequent floods and large expenditure incurred for control of such flood situations. We need to search for scientific alternative to solve this problem on permanent and durable basis. • 'Jal-kunda' and micro irrigation schemes should be urgently activated. • Separate and special provisions for flood control need to be explored.
5	10.9.10	Development of Irrigation in Marathwada
		<ul style="list-style-type: none"> • Diversion of water from Vaitarana will be necessary. • Integrated Water shed development should be implemented on priority basis. • Award of the tribunal restricts quantum of use of water. This Award needs to be reviewed. • Distribution of water through pipeline for the areas with deep black cotton soils. • Focus on farm-ponds and micro-irrigation.

Priority	Para No.	Recommendation
1	2	3
5	10.9.11	<p>Development of Irrigation in Eastern Vidarbha</p> <ol style="list-style-type: none"> 1) Development of some of the areas in Eastern Vidarbha is adversely affected due to naxalite movement. The project in such areas be given adequate funds for completion on priority basis. 2) Amounts necessary for acquisition of forest land, displacement for forest and forest spaces is required to be paid on NPV basis. Such amounts should not be attributed to the projects in the region but should be charged on consolidated fund. Irrigation project in the vicinity of forest areas are adversely affected due to these NPV conditionality. At present drinking water projects are exempt from NPV conditionality. A similar approach must be followed in case of irrigation projects. 3) Distribution of water through pipelines for the areas with deep black cotton soils. 4) Water shed development projects should be implemented with highest priority. 5) Maji Mal gujari tanks should be renovated and their storage capacity should be expanded. 6) Use and promotion of micro-irrigation technique in conjunction with re-development of Maji Mal gujari tanks.
6	10.12.10 Table 10.24	Separate funds of Rs. 3824 crores should be provided for the development of ground water.
7	10.19(5)	In the case of irrigation projects where density of forest areas in submergence regions is less than 0.5 (e.g. Irrigation projects in Vidarbha such as Tultuli, Karwafa) a special permission of the Governor may be sought and water storage capacities of these projects in forest areas should be completed on priority basis.
8	10.14.4	It is necessary to prevent pollution of water. All non irrigation uses and users of water should be mandated re-cycling and re-use.
9	10.19(9)	In order to reduce seepage and wastage in canal distribution systems, distribution of water through closed pipe line should be considered. This option needs to be considered separately for each division. In particular this option should be more urgently exercised in case of DPAP regions and regions of undulating terrains and deep black soils.
10	10.12.6	Ground water has a greater share than surface irrigation water hence it should be considered as a separate development indicator.
11	10.19(2)	Achievement of over-all development would be extremely difficult in those areas where water availability per person is less than 500 cu. m. In view of such grave circumstances meticulous and sparing use of water as well as recycling and reuse of water should be emphasized and promoted. Aurangabad and Amravati divisions deserve to be carefully monitored in this manner.
12	10.10.1	Development indicator based on actual land irrigated should be adopted. In coming ten years deficit in irrigated area should be based on such indicator.
13	10.11.9	It would be difficult to consider any re-structuring without proper comprehensive study of water availability. Except few water sheds water availability in all the watersheds has not been properly assessed and measured. It would be necessary to commence study based on stream gauging.

Priority	Para No.	Recommendation
1	2	3
14	10.9.11	Those areas of Vidarbha where economic development is adversely affected by naxalite movement should be given top priority and the projects in this region should be completed at the earliest.
15	10.12.16	Rain water harvesting should be undertaken on the basis of scientific aquifer mapping. Necessary solutions appropriate to each location and condition be prepared on the basis of recommendations of the ground water experts.
16	10.6.1	The design and project planning in all basins and sub basins should be made on 50% dependability criterion.
17	10.19.10	Storage by itself is not the purpose of the irrigation projects. Therefore, measurement of actual irrigated area should be considered as the basis of 'indicator of development deficit'.
18	10.19.7	Amravati and Aurangabad divisions suffer from severe deficit as measured by water storage index. To remedy such severe deficit, all the local sector irrigation projects (i.e. 250 to 600 hectare projects) should be expedited and the present regulations related to availability of water and other environmental regulations should be relaxed as far as possible.
19	10.19.10	In the design of project, crop pattern and measurement of irrigated area is according to the cropped area. Measurement of actual irrigated areas should be on the basis of cultivated area receiving irrigation service.
20	10.9.18	For all the regions where per hectare water availability is less than 3000 cu.m. per ha., the crop pattern should be seriously reconsidered. There should be ceiling or upper bound on the quantum of area for all the crops (including sugarcane) which require high quantity of water. The crops that could be grown with less rainfall or irrigation needs but command higher value should be promoted and incentivized through appropriate policies.
21	10.19.11	Aurangabad and Amravati divisions have extreme scarcity and need for stringent water saving measures will be urgent for these areas. In these regions the irrigation projects must promote new micro-irrigation technologies and include and improve the design of the programme to incorporate such technologies. This would go a long way in over-coming the water deficit.
22	10.6.4	In the regions where frequency of years with rainfall less than 400 mm is higher than once in ten years, there should be separate special provision in the development plans for transfer of water through pipelines.
23	10.10.3(10)	All the irrigation projects, including large, medium and small should have concept of command area development in their programme of irrigation development. Accordingly, CADA should be appropriately modified and re-vitalized. Such CADA should be multi disciplinary in nature including Agriculture Engineers, Agriculture Economists, Agriculture Extension Officers, Co-Operation, Marketing Warehousing officials from the department. Management and delivery of water on volumetric basis should be handed over to CADA.
24	10.19.14	<p>Priorities in water use should be as follows:</p> <ol style="list-style-type: none"> 1) Drinking water 2) Irrigation 3) Industrial use. <p>Plans for Integrated comprehensive development of water basin should be completed in coming 5 years on urgent basis and MWRRA should prescribe equitable distribution of water in such comprehensive design.</p>

Priority	Para No.	Recommendation
1	2	3
25	10.11.1	Irrigation potential and area developed through local sector schemes should be included in data pertaining to irrigation potential created.
26	10.10.3(11)	The administrative machinery for the management of irrigation projects must improve its water distribution efficiency and should keenly adhere to the principle of delivery of water on volumetric basis for irrigation as well as non irrigation purposes.
27	10.10.5	Government of Maharashtra has already adopted the policy of delegating irrigation management to the beneficiaries. However, till June 2010 only 11.61 lakh hectares out of 47.4 lakh hectares of irrigated potential (i.e. 24.5%) has been handed over to the beneficiaries. Social participation in the project management is one of the important index of irrigation development. In particular the regions suffering from severe deficit, better, efficient and less wasteful management of water use assumes even greater significance. In such regions establishment of water distribution management institutions with social participation should be considered as the high priority. In coming 5 years, a special drive should be taken up to create and strengthen such institutions.

Source : Provided by the water resources sub group of the committee.



CHAPTER 11

Health : Balancing through Universalization

11.0 Introduction

Health is a necessary precondition for economic growth. Human beings can be productive and become 'human capital' or 'human resource' if they are healthy. However, health is not only a means to economic growth but can be viewed as a goal of economic growth. Thus the relationship between health and economic growth is a mutually reinforcing two way track. Regional growth and development can be measured on health indicators and enhanced by health measures. In this chapter, we propose to review the health of the populations in three regions with the following objectives –

11.1 Objectives of the Chapter

1. To review the present situation of health and health care in the three regions of Maharashtra.
2. To select the health indicators and assess health status using district as the unit of analysis.
3. To rank the districts according to their health status score.
4. To estimate the health status deficit of three regions.
5. To recommend a broad strategy for improving health care in the districts with deficient health score.
6. To broadly estimate the financial resources necessary for implementing the strategy.

The committee commissioned a study on the regional analysis of the health sector in Maharashtra. This study attempted a regional analysis of mortality, morbidity and fertility and also took a critical stock of the availability and utilization of health care systems in the three regions. Then, the study deliberated on the key determinants and indicators of health status.

The committee selected four key outcome indicators and assessed the health status in districts and the regions. The health status score of the districts and the three regions were estimated and the districts were ranked according to the score. Finally, the committee identified the broad strategy to improve health and health care in the deficient regions and districts and estimated the financial requirements to implement such corrective strategy in phases.

11.2 Regional Disparities in Health Sector

11.2.1 Demographic Situation

There are 35 districts in the state including Mumbai and Mumbai Suburban from Mumbai Corporation area. The district-wise population along with population density per square kilometer shows extremely high population density of more than 20,000 for two districts of

Mumbai Municipal Corporation. Thane, Pune and Kolhapur districts also have high population density. On the other hand in Gadchiroli district very low population density is observed (See Annex 11.1)

- 1 Annex 11.2 shows district-wise rural, urban and total population in the state as well as the tribal population.

The urban/rural division of the population as per Census 2011 is available, but details of tribal population are not yet available. The vulnerability of tribal population is well known. The district-wise tribal population is extrapolated applying the percentages of tribal population in the 2001 Census data. 15 districts where a large tribal population (more than 2 lakhs), resides and therefore have been notified as tribal are distinctly shown in the Annex 11.2, Column 8.

Comprehensive knowledge of such distribution is essential in understanding the status of health and also for calculation of infra-structure requirement. The urbanization is strongly associated with better health outcomes. On the other hand, the health indicators are poor in tribal areas. Presently the guidelines for norms are only population linked. Maharashtra has highest number of people living in urban areas (5.08 crore). With an urban population of 45.2%, Maharashtra is third most urbanized among the major states, next only to Tamil Nadu (48.4%) and Kerala (47.7%). Urban population growth accounted for 62.8% of total population growth in Maharashtra. Mumbai, Thane, Nagpur and Pune are the most urbanized districts. Gadchiroli, Sindhudurg and Hingoli are least urbanized.

The district-wise child population in Annex 11.3 shows that Jalna and Nandurbar districts have the highest proportion, 14.4% and 14.1%, of under-six year children respectively. These districts also have high total fertility rates and these rates are described subsequently. Both the districts of Mumbai, districts of Sindhudurg, Ratnagiri and Wardha have the lowest proportion and that is less than 10%.

The population sex ratio and child sex ratio as recorded in Census 2011 is given in Annex 11.4. Ratnagiri and Sindhudurg districts form Konkan region and Gondia, one of the tribal districts from Vidarbha, are having very good sex ratios. Mumbai, Mumbai Suburban district and neighboring Thane district are having very poor sex ratio. There are three critical districts with sex ratio below 900 in 2011 viz. Mumbai, Mumbai (Suburban) and Thane. However as compared to 2001 Census, in these districts also there is some improvement in sex ratio. It is up by 61 in Mumbai, 35 in Mumbai (Suburban) and 22 in Thane. There are six districts where the sex ratio is above 900 but less than 925. But trend indicates that the sex ratio in all these districts has decreased during 2001-11 ranging from 24 points in Beed to 8 points in Aurangabad. On higher side of sex ratio there are two districts viz. Ratnagiri (1,123) and Sindhudurg (1,037) despite the fact that both have shown a decline in sex ratio during 2001-11 by 13 and 42 points respectively. Child sex ratio is low in all districts. The geographical variation is distinctly observed. *All the districts from Marathwada and Pune division are having child sex ratio less than 900. All the districts from Nagpur and Konkan division (excepting Mumbai) are having child sex ratio more than 900. Nashik and Amaravati division show varied pattern.*

The estimated proportions of the 60+ year population in 2011 (UNFPA) is given in Annex 11.5. The data clearly show that proportion of senior citizens is drastically less in Mumbai (suburban) and Thane district, while the proportion is high in Sindhudurg and Ratnagiri. Marathwada region has more than 10 percent and Rest of Maharashtra is lowest in this indicator. There are 14 districts with more than 10 percent of 60+ year population. The health problems and the health care needs of the aged population are quite different and need attention.

11.2.2 Mortality

The eventual result of all adverse forces acting against health will be a high and untimely mortality. In this report crude death rate, infant mortality rate, under five years mortality and maternal mortality ratio, are considered for district-wise comparison.

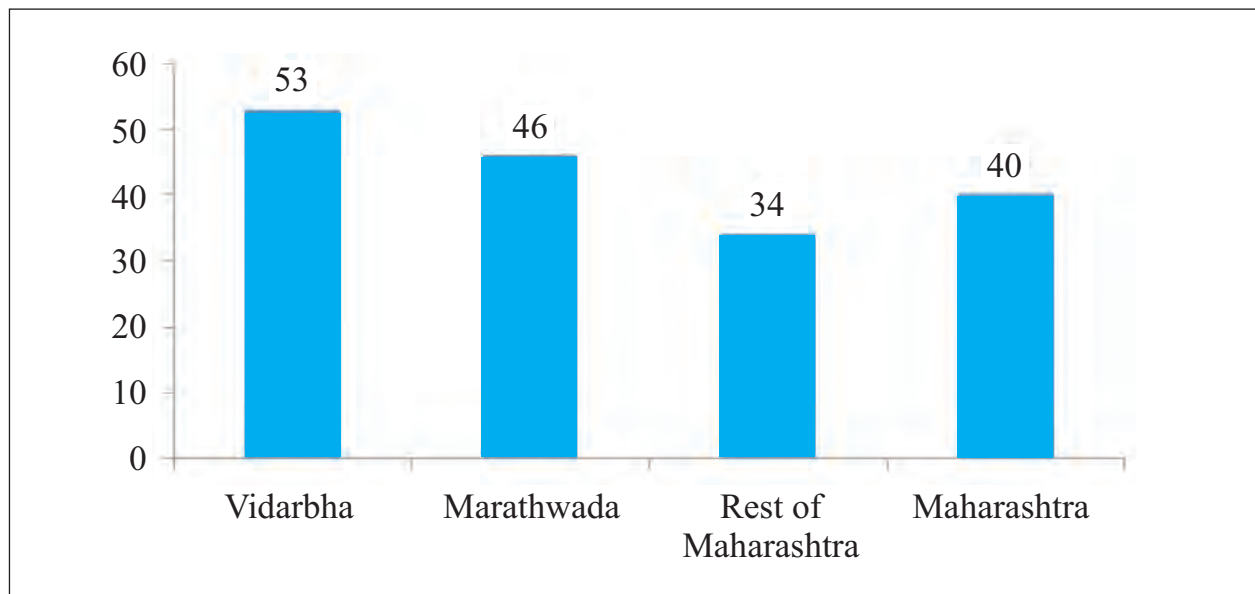
The district-wise **crude death rate** in the rural area is presented in Annex 11.6.

The crude death rate is largely influenced by age and sex structure of the population. The high rate of crude death rate in Sindhudurg and Ratnagiri can be explained by high population of elderly population. These two districts have highest proportion of senior citizens having age more than 60 years. This is also in consonance with the knowledge that a large population of 15-45 age group from these districts is away from place of residence in search of job in Mumbai. Analysis of the table identifies that *Marathwada is having lower mortality, Vidarbha is having higher mortality and Rest of Maharashtra is having very wide variation.*

District-wise **Infant Mortality Rate** in rural area estimates derived from DLHS 2 and 3 by the International Institute of Populations Sciences (IIPS) is given in Annex 11.7 which clearly indicates that two districts (Ratnagiri and Kolhapur) from Rest of Maharashtra have very low infant mortality rate. High infant mortality rate has been estimated for Chandrapur, Gadchiroli and Nandurbar districts. *The estimated region-wise infant mortality rate show highest rate in Vidarbha region (39.5), followed by Marathwada (35) and the lowest rate is observed in Rest of Maharashtra (28.8).*

Neo-natal, post neo-natal, 1-4 years, 1-5 years and total under-five mortality rate estimates for the year 2010 in the Maharashtra State using indirect estimates from MORTPAK and DLHS 2 and 3 together are given in Annex 11.8. Indirect estimates of under-five mortality rate in the regions of Maharashtra in the year 2007-2008 using Brass Method are given in Figure 11.1 (Ram et al 2012). The pattern of highest mortality in Vidarbha and least in Rest of Maharashtra is observed in this indicator also.

Figure 11.1
Under-five Mortality Rate in the Regions of Maharashtra



Source : Ram F et al. IIPS (2012)

Information on district wise **Maternal Mortality Ratio** which is defined as number of maternal deaths per one lakh births from the MIS of the Health Department is given in Annex 11.9. Due to relatively smaller number of maternal deaths (as compared to infant deaths) the district-wise estimates vary widely and are unlikely to be precise. The Maternal Mortality Ratio for the year 2011-12 in Maharashtra State was 90 per lakh live births. The extrapolated rate for the year 2011-12, derived from available statistics indicates an MMR of 85 per lakh live births, which closely matched the MMR recorded in the MIS. Gadchiroli, Nagpur and Akola districts are outliers having very high MMR 184, 178 and 161 respectively. All these districts are from Vidarbha region. *The Vidarbha region therefore is having the highest Maternal Mortality Ratio.*

The **life expectancy** at birth was estimated for the three regions. The regional estimates were population weighted. *The life expectancy is lowest in Vidarbha and it is highest in Rest of Maharashtra.* The district wise life expectancy at birth derived from DLHS 3 is given in Annex 11.10. Significantly the lowest life expectancy at birth was observed in Nandurbar district followed by life expectancy of Chandrapur district. All the districts in Rest of Maharashtra excepting Nandurbar and Jalgaon have more than 70 years. There are five districts which have high life expectancy of 75 years and above. They are all in Rest of Maharashtra.

11.2.3 Morbidity

The morbidities are broadly categorized as communicable and non-communicable diseases. For study of morbidity among communicable diseases, attempts are made to assess district-

wise and region-wise variation in respect of pneumonia and diarrhea for two reasons. First they are the commonest diseases in the community and secondly the affected population is children who constitute about 12% of the population. Morbidity due to malaria and tuberculosis is also studied. This pair of diseases represents chronic diseases and tuberculosis is having high mortality. Lastly data on HIV positivity is also analyzed which affects productive and sexually active age group.

The district-wise data from DLHS-3 on women reporting **diarrhea and pneumonia** in their children is presented in Annex 11.11.

A view on it clearly points out that, lowest five districts with diarrhea as morbidity are from Rest of Maharashtra. The district which has the highest percentage of history of diarrhea as well as pneumonia in children is Buldhana from Vidarbha. *The pneumonia (ARI) was reported most in Vidarbha (15.6%), next in Marathwada, 11.4% and the least in the RoM, 9.5%.*

The data about incidence of **malaria** is obtained from Health Management Information System of the Department of Health and Family Welfare. The data are presented in Annex 11.12. A look on it indicates that malaria incidence is extremely high in six districts only from eastern and western parts of the State. Out of these six districts four are from Konkan region (Mumbai is considered as one district) and two districts are from Vidarbha region. As per data from HMIS, *incidence is lowest in Marathwada followed by Vidarbha and highest in Rest of Maharashtra region.* However, this is based on the reporting of diagnosed cases. The diagnosis and reporting rate will be much better in Mumbai and deficient in the tribal areas where the true incidence might be higher, as is seen in Gadchiroli and Gondia.

The prevalence of **tuberculosis** per 100,000 population is presented in Annex 11.13. The data from DLHS-2 was used, instead of the HMIS data which was not consistent. Gadchiroli, Amravati, Chandrapur, Beeds Buldhana and Washim districts show high levels. All districts except Beed are from Vidarbha region and the first three are inhabited by a large tribal population. *Region wise also Vidarbha has maximum prevalence (306), Marathwada is the next region (233). Rest of Maharashtra has lowest prevalence. (179).*

The data on **HIV positivity** is obtained from Maharashtra State AIDS Control Society. The data is presented in Annex 11.14. Sangli district is unequivocally the highest on both the indicators. Mumbai follows Sangli in positivity among pregnant women. Both the districts belong to *Rest of Maharashtra region. That region is having highest positivity followed by Marathwada and the lowest positivity is in Vidarbha region.*

The districtwise percentage of **malnourished children** under-five years who were below two and three standard deviations of weight for age in 2002-04 is given in Annex 11.15 and is obtained from DLHS 2. Subsequent district wise data of reasonable reliability are not available. The first five districts having high percentage are predominantly tribal. The lowest six districts do not include any tribal district. The latest data pertaining to the year 2011-12 are also given to describe the malnutrition in children in Maharashtra State. These data from monthly progress report from the districts are also shown in Annex 11.15. The recorded

percentage of malnourished children is low, probably because it is from regular service reports, however district wise comparison provides the idea of the imbalance. This information is broadly in line with DLHS 2 data. All the three outlier districts are predominantly tribal. Nandurbar district is having very high percentage of severely malnourished children. Gadchiroli and Amravati districts are also having very high percentage of severely malnourished children. *Vidarbha region shows the highest prevalence of malnutrition (12.9%), RoM intermediate (11.6%) and Marathwada the lowest (8.6%).*

The data on partial and total **blindness** from DLHS 2 are shown together in Annex 11.16. The data represents prevalence of blindness per lakh population in 2002-04. Extremely high prevalence of partial blindness was observed in Wardha district from Vidarbha region (may be due to higher detection by the two medical colleges situated in a small district). Lowest prevalence of partial blindness was observed in Mumbai Suburban district from Rest of Maharashtra. *Vidarbha region showed the highest prevalence and the lowest was seen in Rest of Maharashtra.* The prevalence of complete blindness was very high in three districts. Leading was Gadchiroli district from Vidarbha, next was Ahmednagar from Rest of Maharashtra and the third was Parbhani district from Marathwada. Regionwise pattern indicated highest prevalence of complete blindness in Vidarbha, followed by Marathwada and last was Rest of Maharashtra. In Rest of Maharashtra excepting Ahmednagar district, all other districts had low prevalence of complete blindness. For both types of blindness the region wise distribution was alike.

The **road traffic accidents** are emerging as one of the leading causes of death. The road traffic accidents statistics like accidents, number of persons killed and number of persons injured per lakh population is given in Annex 11.17 (Motor transport statistics). The contributory factors to the peculiar situation of Mumbai showing highest number of accidents and least number of fatalities may be due to large number of registering of accidents with police and high availability of hospital care with advanced facilities. Least number of accidents occurred in Gadchiroli district. Extremely low case fatality rate was recorded in Mumbai district. Osmanabad district has high case fatality rate. Morbidity was extremely high in Dhule district. *Marathwada region recorded the least number of accidents and Rest of Maharashtra recorded the highest with Vidarbha region occupying intermediate position.*

11.2.4 Fertility

Recent data for the year 2011, published by the Registrar General of India in the form of Sample Registration System Bulletin clearly shows that the crude **birth rate** for the State has been substantially reduced to 16.6 per thousand. The data from the Survey of Cause of Death (SCD) and estimates derived by IIPS are given in Annex 11.18. In the available birth rate from Survey of Cause of Death from rural area, the outlier district having very high birth rate is Nandurbar. In contrast, two districts in Rest of Maharashtra are outliers by having very low crude birth rate.

Information about **Total Fertility Rate** obtained from Survey of Cause of Death from rural area, is given in Annex 11.19. Outlying highest total fertility rate was reported from Buldhana

district from Vidarbha. Nandurbar district from Rest of Maharashtra and Jalna & Hingoli district from Marathwada followed Buldhana. Sindhudurg and Ratnagiri districts from Konkan are having TFR of 1.5. Chandrapur district from Vidarbha is also having quite low TFR. No district from Marathwada is having TFR less than 2.

11.2.5 Comparison of Rural– Urban Health Indicators

The Sample Registration System, Government of India, has published the health indicators (2011) for the rural and urban areas in Maharashtra. These respectively are – IMR 30 (R) and 17 (U), Crude Birth Rate 17.3 (R) and 15.8 (U), crude death rate 7.3 (R) and 5.1 (U). Obviously the health status in rural areas (include tribal areas) is worse than in the urban areas. This can be easily explained by the lower income, social and educational levels and difficult access to health care.

11.3 Health Care System

Population linked '**infrastructure**' is an accepted norm by the State Government. A **sub center** caters to a population of 3,000 in tribal area and 5,000 in non-tribal area. The requirement of the sub-centers considering population of 2011 census is given in Annex 11.20.

The population norm for **Primary Health Center** is 30,000 for rural area and 20,000 for tribal area. Requirement of PHCs separately for tribal and non-tribal area considering population of 2011 Census given in Annex 11.21. Like distribution of sub-centers, there are few districts where number of PHCs is more than population norm due to special schemes in these tribal or LWE affected districts. *Maximum backlog both in respect of sub-centers and PHCs is seen in Rest of Maharashtra which has resulted due to tremendous increase in the population in this region.*

The norm for establishment of Rural Hospital is based on number of PHCs which refer cases to RHs. Presently for five PHCs one Rural Hospital is functioning in the State of Maharashtra. There is one more set of referral institutions under the name of Sub-District Hospitals which are upgraded Rural Hospitals having bed strength of 50 to 200. The Sub-District Hospitals are additional referral institutions.

Government of Maharashtra has approved the **Infrastructure Master Plan**, this year itself. A total of 881 new subcenters, 254 Primary Health Centers, 47 Rural Hospitals and 3 Sub Divisional Hospitals have been sanctioned. In 2,102 sub-centers additional 3058 posts of MPW and 3,579 posts of ANM have been created. Similarly in the 834 PHCs, 1,072 ANMs, 210 Medical Officers and 91 Laboratory Technicians' additional posts have been created. In 53 existing rural/ sub district hospitals bed strength have been increased. Although the institutions have been created, actual functioning may start after few years only. The present doctor population ratio, nurse population ratio and bed population ratio may not substantially change immediately but they may improve when the institutions are made functional.

In the **urban areas** more than two decades ago Government of Maharashtra had sanctioned various types of health posts. Presently functioning health posts are given in Annex 11.22. Most of the corporations also have family welfare centers, maternity hospitals etc. But in general the health services in urban population are not uniform and are meager.

The availability of qualified **doctors** (MBBS and higher qualified) includes all the doctors registered with Maharashtra Medical Council as on March 2012, both from private and government sector. The number of registered doctors in Maharashtra inclusive of Mumbai is 77,987 doctors and the ratio is 6.6/10,000 of population. Mumbai alone has registered 23, 666 doctors which means availability of 7.70/10,000. Inclusion of Mumbai data raises Rest of Maharashtra figure to 57,794 doctors or 7.55/10,000 population. Nagpur and Pune district are having outlier high number of doctors. *The best ratio is in Rest of Maharashtra and low but almost equal in Vidarbha and Marathwada. This picture is different than one observed for the PHCs and sub-centers because here the doctors in the private sector are also included and their availability is more in Rest of Maharashtra.*

The **nurse population ratio** is given in Annex 11.23. All the nurses registered with Maharashtra Nursing Council irrespective of qualifications and working in public or private sector are taken in to consideration. In the state there are about two doctors per nurse, exactly in the opposite direction of the desired ratio. In this indicator Vidarbha region is leading in the state. Three districts from Vidarbha have very high nurse population ratio. This fact is related to number of sub-centers which are more than the population norm of sub-centers in the Nagpur division, especially due to the special allocation in the tribal or LWE affected areas.

The district wise **hospital beds** presently available irrespective of private or public sector institution are given in Annex 11.24. The data is derived from Directorate of Economics and Statistics and from Maharashtra Pollution Control Board. Mumbai is having the highest number of beds per lakh population. *Among the regions Marathwada has poorest and Rest of Maharashtra has the best ratio.*

11.4 The Paradox

*The data on infrastructure (linked to population norms) do not match with the health outcomes – mortality or morbidities. The health outcomes are worst in Vidarbha while the number of sub-centres, PHCs and nurses are reportedly deficient in Rest of Maharashtra. This **paradox** is explained by lower income and other developmental indicators in Vidarbha, the adverse effect of which on health outcomes is not completely neutralized by providing little more public health infrastructure. Moreover, the private sector which provides nearly 75% of medical care is not included in the government data of infrastructure or service. The distribution of private sector is visible in the number of doctors and hospital beds. There, the situation is best in RoM. The paradox underscores the importance of socio-economic development in determining the health status and of the private sector in providing medical care.*

11.5 Utilization of Services

For studying utilization of different services, four Reproductive and Child Health indicators have been selected, which include, women receiving full ante-natal-care, institutional deliveries, fully immunized infants and we have lastly included unmet needs of family welfare. The last indicator provides information where there is failure of services for various reasons. It indicates the desire of women to limit the family size but they are not using any family welfare measures. All the data are compiled from DLHS-3.

The district-wise details of **full ante-natal check-up** are given in Annex 11.25. The *Marathwada region had minimum proportion of women undergone full ante natal checkup and maximum proportion was in Rest of Maharashtra.*

After launching of National Rural Health Mission and particularly the Janani Suraksha Yojana, there is improvement in **institutional deliveries**. Data from two different sources DLHS-3 and HMIS is presented in Annex 11.26. However, irrespective of the service data (HMIS), one would suspect that the districts like Nandurbar and Gadchiroli have low proportion of institutional deliveries.

Percentage of **immunized children** is given in Annex 11.27. HMIS being service data, the reported figures often overshoot 100 percent. DLHS data show that Nandurbar district has extremely low immunization coverage followed by parent district Dhule from which Nandurbar was carved out. Gadchiroli district is third poorest in immunization.

The **unmet needs for family planning** from DLHS 3 is presented in Annex 11.28. The maximum unmet needs in Marathwada, followed by RoM and least in Vidarbha is consistent with the Total Fertility Rates in the three regions.

11.6 Health Outcomes

11.6.1 Outcome Indicators

Following the methodological decision made by this committee to assess the regional imbalance based on outcomes, and not the inputs like infrastructure or the services provided by Government, we did not select the infrastructure or service indicators such as the number of PHCs or hospital beds or doctor population ratio or children immunized etc. Even otherwise the infrastructure data do not match with the regional outcomes. Hence, the committee identified a selected outcome indicator for assessing health status. The choice of indicators was based on (a) the availability of district wise data of good quality and (b) the ability of the indicators to measure important health status aspects. We did not include non-communicable diseases in the outcomes due to lack of reliability of prevalent data at the district level. The four outcome indicators selected are as follows:

- (i) Infant Mortality Rate (IMR);
- (ii) Prevalence of Tuberculosis;
- (iii) Malnutrition (weight for age) in children and
- (iv) Total Fertility Rate (TFR).

11.6.2 Health Status Score

The study commissioned by the committee collected secondary data on these four indicators (the results have been presented earlier in Annexes 11.7, 11.13, 11.15 and 11.19 and converted them into health status score of each district.) For calculating score, the district was considered as a unit. Maximum 100 marks were allotted for each indicator. Best value for each indicator among the districts was assigned 100 marks and rests of the districts accordingly were marked in percentage. Thus maximum possible total marks were 400. The comprehensive score is given in Annex 11.29, Column 7.

11.6.3 Regional Health Status Deficit

The mean score of the three highest districts (Ratnagiri, Sangli and Raigad), 302.7 was considered as the reference score. The distance of the total score of each district from the reference score was calculated (The column 8 in Annex 11.29). This provides the quantitative estimate of the deficit. Mean deficit scores of three regions were also estimated (Table 11.1). The table shows that Vidarbha region has the highest deficit, followed by Marathwada. Rest of Maharashtra has the lowest deficit. Entire working of regional deficit in Health in terms of proportion can also be seen at a glance in Annex 3.7.

Table 11.1
Regional Health Deficit
(Excluding Mumbai)

S.No.	Region	Deficit (Distance from the Mean Health Score of the Highest 3 Districts (302.7))
1	2	3
1	Vidarbha	121.8
2	Marathwada	108.9
3	Rest of Maharashtra	69.3

Source : Provided by the study group on health.

11.6.4 Ranking of Districts

Table 11.2
Health Outcome Scores of Districts by Rank Order and the Rural Population (Excluding Mumbai)

Levels	Sr. No.	District	Total Score +	Ranking	Rural Population	Cumulative Rural Population
1	2	3	4	5	6	7
I	1	Nandurbar*	129.9	33	1372821	1372821
	2	Gadchiroli*	151.2	32	954909	2327730
	3	Buldhana	152.5	31	2037398	4365128
	4	Amravati*	159.9	30	1851158	6216286
	5	Gondia*	165.2	29	1096577	7312863
	6	Chandrapur*	178.9	28	1428929	8741792
	7	Dhule*	179.4	27	1479826	10221618
	8	Hingoli	179.5	26	998612	11220230
II	9	Thane*	180.3	25	2545470	13765700
	10	Wardha*	181.6	24	877474	14643174
	11	Washim	183.7	23	985747	15628921
	12	Parbhani	183.8	22	1266280	16895201
	13	Nashik*	189.1	21	3509814	20405015
	14	Jalna	189.9	20	1581617	21986632
	15	Aurangabad	190.6	19	2081112	24067744

Levels	Sr. No.	District	Total Score +	Ranking	Rural Population	Cumulative Rural Population
1	2	3	4	5	6	7
III	16	Beed	194.1	18	2070751	26138495
	17	Osmanabad	196.0	17	1376519	27515014
	18	Nanded	200.1	16	2447394	29962408
	19	Bhandara	200.5	15	966503	30928911
	20	Nagpur*	200.8	14	1474844	32403755
	21	Akola	202.2	13	1094165	33497920
IV	22	Yavatmal*	213.5	12	2174195	35672115
	23	Latur	216.5	11	1829216	37501331
	24	Jalgaon*	223.4	10	2887206	40388537
	25	Ahmednagar	224.6	9	3630542	44019079
	26	Sindhudurg	233.0	8	742645	44761724
	27	Pune	237.0	7	3678226	48439950
	28	Satara	242.1	6	2433363	50873313
	29	Solapur	254.7	5	2918665	53791978
	30	Kolhapur	266.2	4	2645992	56437970
	31	Raigad*	273.1	3	1664005	58101975
	32	Sangli	295.1	2	2102786	60204761
	33	Ratnagiri	339.9	1	1351346	61556107
					61556107	61556107

+ From Annex 11.29 (column 7)

* The proportion of tribal population in the district is more than 10% (Annex11.2, column 3)

The districts were ranked based on the total health status scores (column 7, Annex 11.29) so estimated. The rank order is presented in Table 11.2, Column 5.

1. The districts can be broadly categorized into 4 levels.
2. Out of the 33 districts, 8 districts are worst off with total health score below 180 (Level I). These districts are Nandurbar, Gadchiroli, Buldhana, Amravati, Gondia, Chandrapur, Dhule and Hingoli. Not surprisingly six of these have a large tribal population. (That confirms the robustness of the outcome-based score).
3. The bottom half (17) districts (Level I and II) include largely the districts in Vidarbha and Marathwada. But not very surprisingly, the districts of Nandurbar, Dhule, Thane and Nashik (with a large tribal population) from the RoM region rank in the bottom half (17) of the ranking order. Six districts occupy level III. They are all from Vidarbha and Marathwada. The rest 10 districts from the RoM region occupy the top (Level IV) ranks in the order. *All districts from Vidarbha and Marathwada fall in nearly the lower two third (23) districts (Level I, II and III) while 10 out of 14 districts in RoM fall in Level IV. The regional imbalance in the health status is obvious.*
4. The districts with more than 10% population being **tribal** are marked with an asterisk (*) in column 3 of the Table 11.2. The proportion of such districts in the four levels is as follows : Level I 6/8, Level II 3/9, Level III 2/6, Level IV 2/10. Thus, out of the bottom 17 districts, 9 have sizable proportion (>10%) tribal population as against 4/16 in the

upper half districts. In addition to the evidence of poor health status of tribal population presented in the Chapter on Tribal Regions in this report, we can see their crowding in the lower half districts in this analysis as well.

11.6.5 Summary

1. There is a regional imbalance in the health status of three regions, with deficit scores Vidarbha (121.8), Marathwada (108.9) and Rest of Maharashtra (69.3) in the descending order of the health status deficit.
2. The districts with the lower score are mostly from Vidarbha and Marathwada, but also include four districts from RoM with a large number of tribal population.
3. Tribal population is a common feature in the districts with lower health score underscoring the special attention needed to the tribal areas. These should receive high priority.
4. The health status of rural population is worse than that of urban. Hospitals and doctors are located more in urban areas. Hence the rural population should receive priority while correcting the imbalance.
5. Curiously, the deficit in public health infrastructure is more in RoM but the health status there is better. Obviously, other factors – especially the socio-economic development and the private health sector play important role in determining health outcome.
6. The private sector, especially in RoM and in urban areas where the number of doctors and hospital beds are in higher proportion, plays an important role in providing health care in the state.

It is recommended that based on the health score ranking, the districts may be categorized into four levels for the interventions to remove of disparities in health :

- Level I: The lowest quartile, eight districts below the health score of 180.
- Level II: The lower half, seventeen districts below the health score of 200.
- Level III: 23 districts, below the score of 220.
- Level IV: All 33 districts.

The rural population (including tribals) of these levels is shown in Table 11.3

Table 11.3
Four Levels and the Rural Population

Level	Description	Rural Population
1	2	3
I	Eight districts below the health score of 180	11220230
II	Seventeen districts below the health score of 200	27515014
III	Twenty three districts below the score of 220	37501331
IV	All 33 districts	61556107

Source : Provided by the study group on health.

11.7 Strategies for the Removal of Health Disparities

Health depends, to a substantial degree, on the socio-economic status of the population. Hence development in other sectors, such as increasing education or Per Capita Income will, to some extent, contribute to improving health status. No single technical intervention (such as immunization or hospital delivery or cancer detection) will improve the overall health status which is multidimensional. Hence, the health care package per se needs to be broad.

In the past 10 years several global as well as national expert groups and reports have concluded that:

1. Economic development is dependent on human development; and human development needs healthy population.
2. Lack of access to health care is a major barrier in achieving better health.
3. Private sector or market-based health care alone results in very inequitable distribution of health care and enormous cost escalation. Thus, medical care in the US, almost exclusively private, costs \$ 6,000 per capita per year. And yet it leaves out a sizable proportion of the most needy. (Hence the 'Obamacare' in which the state subsidizes or supports health care coverage to the vulnerable population).
4. The share of public health care in India, over the past 20 years, has shrunk. It is inadequate. Out of the total expenditure on health care, equivalent of nearly 5% of the GDP, the public (government) health expenditure is only equal to 1.2% of the GDP. In most of the developed countries the health care expenditure (either public or social health and insurance) is around 8-12% of GDP. In the middle level countries like China and Thailand, the public spending on health is 2.3 to 3.3% of the GDP. (High Level Expert Group on Universal Health Coverage, Planning Commission, GoI, 2001)
5. People in India are largely dependent on the health care purchased from the private sector, with the result that according to the Planning Commission (12th five year Plan document) nearly 75% of the outpatient medical care and 50% of inpatient care is paid for by the sick people. This 'out of pocket' payment makes access to health care difficult, and sadly, pushes three to four crore people below poverty line every year;
6. Universal Access to Health Care or Universal Health Coverage should be guaranteed by the State to every citizen especially to the vulnerable ones.

Therefore, **three pronged strategy** is proposed for removing regional disparities in the health sector in Maharashtra:

- (i) Improving the social and economic determinants of health : This will be accomplished by way of the measures suggested in other chapters in this report.
- (ii) Universal Health Coverage (UHC) in a phased manner.
- (iii) Strengthening of Public Health Care delivery systems in phase 1.

The last two are complementary. The UHC needs a strengthened public sector health care system and also makes use of the private medical care sector by contracting in its services. Hence, in this report we have recommended introduction of UHC in the health deficit areas on priority basis. The public and private both sectors will be utilized.

11.7.1 Universal Health Coverage

The World Health Organization has strongly recommended adoption of **Universal Health Coverage**. Actually almost all developed countries except the US have partial or complete UHC for their citizens. In addition, Mexico, Brazil, South Africa, SriLanka, Thailand and China have introduced the UHC in their countries.

Planning Commission of India constituted a High Level Expert Group (HLEG) on Universal Health Coverage. This group, after extensive work, submitted its report and recommendations to the Planning Commission in November 2011. The 12th Five Year Plan has included this concept and recommended that the states introduce district pilots of UHC. While the full report and the recommendations can be seen on the website (http://uhcforward.org/sites/uhcforward.org/files/India_report.pdf) the vision and the three diagrams representing strategy, health care workforce and expected outcomes are reproduced here (See Figures 11.2, 11.3 and 11.4).

11.7.2 Vision

Our vision of Universal Health Coverage incorporates the different dimensions of universal health assurance: (a) health care, which includes ensuring access to a wide range promotive, preventive, curative, and rehabilitative health services at different levels of care, (b) health coverage, that is inclusive of all sections of the population, (c) health protection, that promotes and protects health through its social determinants and (d) These services should be delivered at an affordable cost, so that people do not suffer financial hardship in the pursuit of good health.

Ten principles have guided the formulation of our recommendations for introducing a system of UHC in India: (i) universality; (ii) equity; (iii) non-exclusion and non-discrimination; (iv) comprehensive care that is rational and of good quality; (v) financial protection; (vi) protection of patients' rights that guarantee appropriateness of care, patient choice, portability and continuity of care; (vii) consolidated and strengthened public health provisioning; (viii) accountability and transparency; (ix) community participation; and (x) putting health in people's hands.

We propose that every citizen should be entitled to essential primary, secondary and tertiary health care services that will be guaranteed by the government. The range of essential health care services offered as a National Health Package (NHP) will cover all common conditions and high-impact, cost-effective health care interventions for reducing health-related mortality and disability. A panel of experts should determine the package of services taking into account the resource availability as well as the health care needs of the country.

UHC moves beyond 'insurance' by providing an 'assurance' of health care for multiple needs and includes health beyond health care, going beyond a mere illness response. UHC should address health in all of its dimensions and emphasize prevention and primary health care, which are ignored, neglected or even undermined by the usual systems of health insurance. Such an assurance has to be provided by the government, which has to act as the guarantor of UHC and ensure its success and sustainability, by mobilizing all societal resources and

advance multi-sectoral actions. In this perspective, the UHC is linked firmly to the Right to Health and converts an aspirational goal into an entitled provision.

For such a vision of the UHC to be realized, a tax based system of health financing is essential. This is also the global experience, wherein countries which have introduced UHC have mostly depended on general revenues rather than on unsteady streams of contributory health insurance which offer incomplete coverage and restricted services. For UHC to succeed in India, political and financial commitments are required from the Central as well as State Governments.

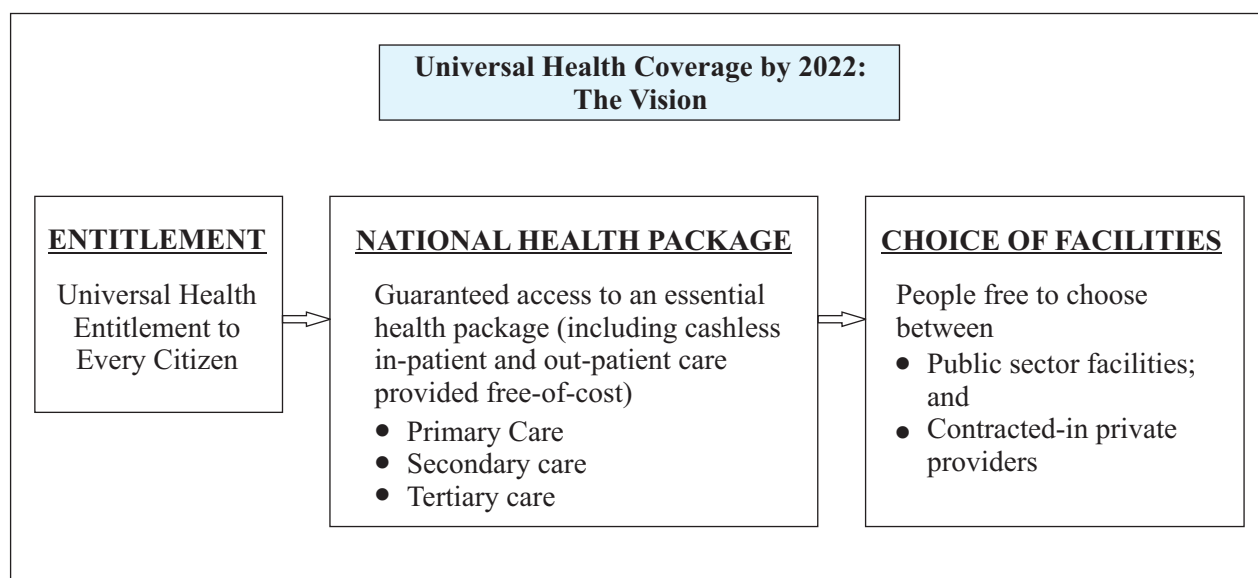
11.7.3 Six critical areas are essential to augment the capacity of health system to fulfill the vision of UHC. These areas listed below should be the focus of any plan on UHC.

1. Health Financing and Financial Protection.
2. Health Service Norms and infrastructure.
3. Human Resources for Health.
4. Community Participation and Citizen Engagement.
5. Access to Medicines, Vaccines and Technology and
6. Management and Institutional Reforms.

11.7.4 Strategy

Health care services to all citizens covered under UHC will be made available through the public sector and contracted-in private facilities (including NGOs and non-profits) (See Figure 11.2).

Figure 11.2
The Strategy

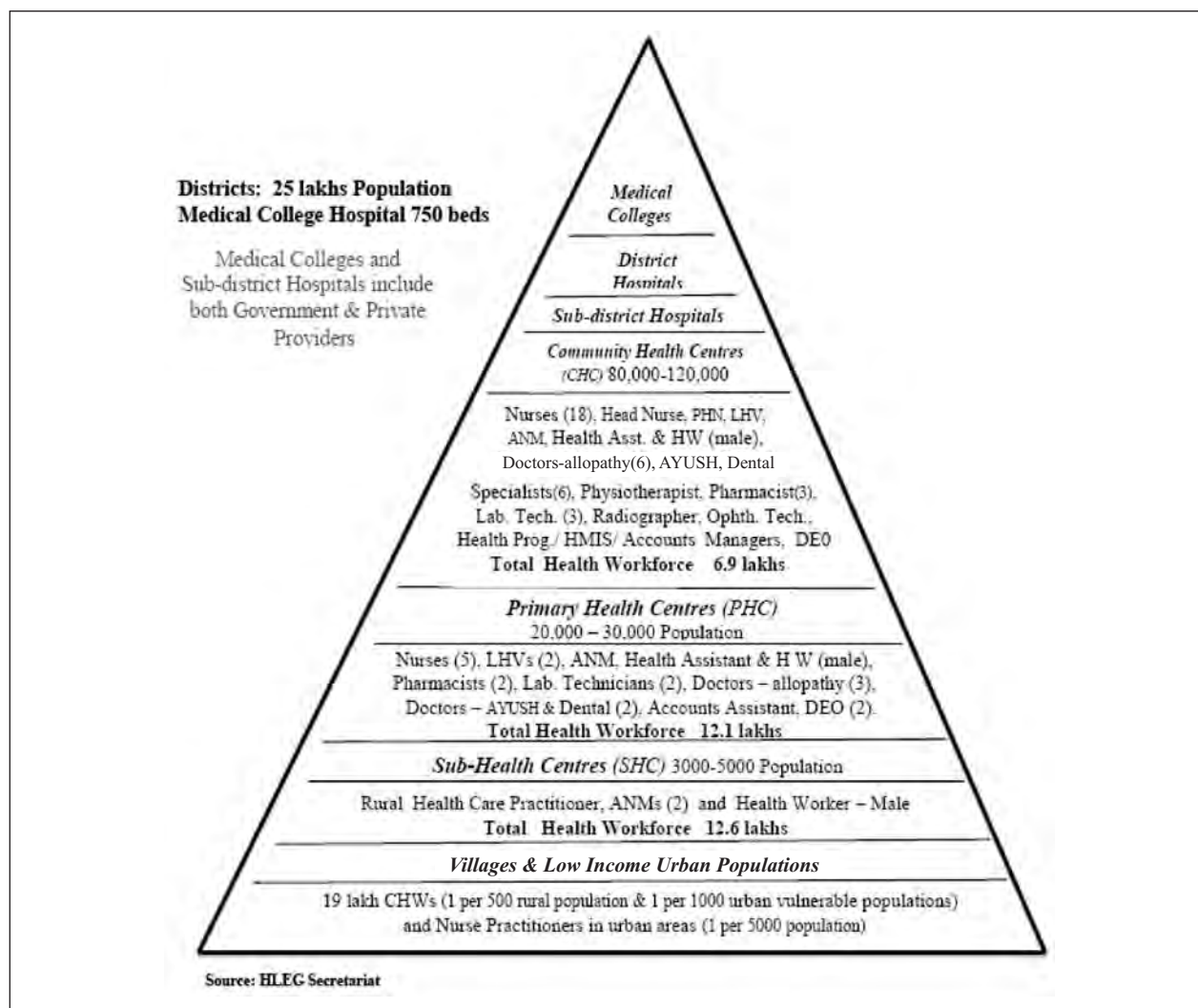


11.7.5 Human Resource

A large number of Community Health Workers (CHW), ANMs, nurses, doctors, technicians, management personnel will be required. (Figure 11.3). For generating the human resource required for the UHC, the pattern and strategy suggested by the HLEG should be considered by the State.

Each district should have (1) at least five or more CHW training centres, one per two blocks, (2) District Knowledge Centre (attached to the district hospital) which should include a medical and nursing college in the districts having more than a million population and (3) Maharashtra should explore starting the three and half years B.Sc. Community Health courses after 12th science in District General Hospitals. This strategy will benefit local candidates and in the long term will minimize shortage of trained manpower.

Figure 11.3
The Pyramid of Universal Health Care (National)



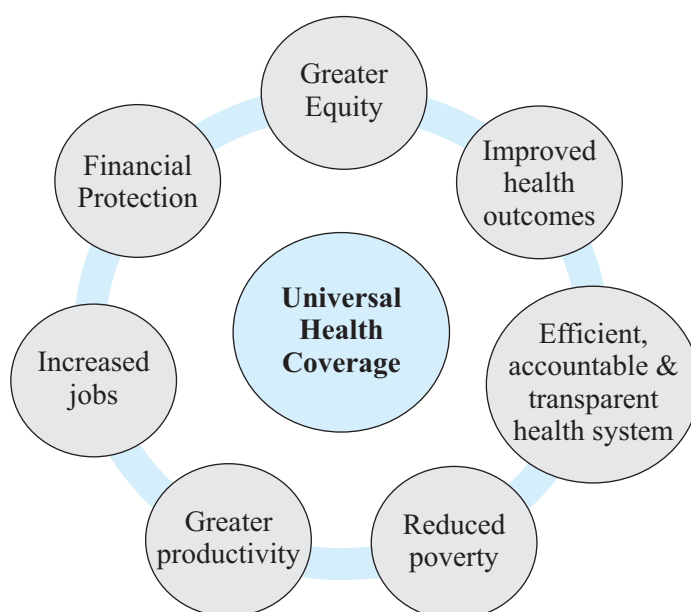
11.7.6 Other Aspects

- The contents of the health care package.
- Community level empowerment and participation.
- The medicines, vaccines and technology.
- The management structure.
- The financial arrangements.

These are not elaborated here because these are well described by the HLEG report, and the State should adopt from that.

Similarly, special recommendations for **health care in tribal areas** have been provided in the chapter on Tribal Regions in this report.

Figure 11.4
The Expected Outcomes



11.7.7 Strengthening of Public Health Care Delivery System in the Phase I

The HLEG report provides detailed norms and recommendations on the public health care delivery system. When these are implemented, all aspects such as the infrastructure, manpower, medicines, quality and finances will be adequately covered. But by the time it is done, following steps to strengthen the public health care institutions according to the present population norms be taken.

The unit of operation: The most suitable unit for strengthening of health care systems seems to be the district, as reliable data has been presented. Based on the health score, the eight critical districts with the lowest health score that need immediate attention are Nandurbar, Gadchiroli, Buldhana, Amravati, Gondia, Chandrapur, Dhule and Hingoli.

Criteria of establishment of public health institutions such as sub-centres, PHCs, CHCs and sub-district and district hospital: The Government has recently sanctioned new institutions under Master Plan. Principally approval of population plus distance norm may be accepted by the Government and may be implemented first in eight districts, to be followed in the remaining 15 districts, thus covering the bottom 23 districts and then finally covering the entire State.

Sequencing or prioritizing institutions: One of the major differences in states having excellent health care like Kerala is population served by a sub-center. Hence, it is recommended that the first priority in these eight districts be given to new sub-centres with distance norms.

In the Master Plan, Government of Maharashtra has already decided to upgrade some Rural Hospitals of 50, 100 and 200 beds. Execution of this strategy may be carried out urgently in identified eight districts.

Present minimum bed strength for district general hospital (civil hospital) is 200. For reaching bed population ratio and possibility of starting and attaching medical college in future, the bed strength may be increased to a minimum of 300 (where it is less than 300) as per guidelines of Medical Council of India.

11.8 Resource Requirement

As per the HLEG estimation (and the expert note, Annex 11.30) 3% of the GDP or Rs. 2,000 per capita per year will be required for providing UHC in India. Under the 12th Five Year Plan, Government (State and the Central contribution) is expected to spend about 1.87% of GDP per year for public health care during 2012-2017. Maharashtra State (including the Central contribution) is expected to spend Rs. 1,355 per capita per year by 2019-20. Thus if UHC is introduced in 2014, at that year the net addition required would be almost up to 60% of the total estimated cost of providing UHC, i.e. additional Rs. 1,200 per capita per year.

Thus, it is recommended that UHC be introduced in four phases only for the rural (including tribal) population. In the first phase the eight districts below the health score of 180 should be covered. In the next phase UHC should be extended to the additional nine (total 17) districts below the score of 200. In the third phase the rural population in 23 districts below the score of 220 be covered. Finally in the phase IV rural population in all 33 districts should be covered. Phasewise Annual cost required for UHC is given in Table 11.4.

Table 11.4
Phase wise Annual Cost

Phase	Districts Covered	Rural Population (2011)	Additional cost for UHC (per capita)	Annual Amount (Rs. Crore)
1	2	3	4	5
I	Total 8 districts below score of 180	1,12,20,230	Rs. 1,200	1346
II	Total 17 districts below score of 200	2,75,15,014	Rs. 1,200	3301
III	Total 23 districts, below the score of 220.	3,75,01,331	Rs. 1,200	4500
IV	All 33 districts	6,15,56,107	Rs. 1,200	7386

Source : Provided by the study group on health.

Eventually, in order to cover the entire rural plus urban population of Maharashtra under UHC, an additional provision of Rs. 13,200 crore will be required (Rs. 1200 x 11 Crore population). We feel that Government would be able to implement 100% UHC by the beginning of the 14th five year Plan (2022) and the total requirement at current prices and current population would be certainly within the 3% of the GDP at that time as the GDP will certainly be substantially more at that time, and so would be the tax collection.

11.9 Way Forward

To prepare the implementation plan for what we have recommended, Government should set up an Expert Group for introducing UHC. The Expert Group should take stock of all existing government schemes, including NRHM, existing health insurance schemes of the State Government (like Jeevandayi Yojana) as well as Central Government (Rashtriya Bima Suraksha Yojana) and propose whether, the secondary and tertiary care in hospitals be financed through insurance. However, since medical insurance leads to cost escalation and little health promotion, the preferred mode of providing secondary and tertiary care will be the one recommended by the HLEG, i.e. strengthening public health care institutions (like Tamil Nadu) and also contracting in the private providers, but payment made to the providers by an agency created by the Government. This could be on the basis of capitation (i.e. the health care provider is paid based on the population covered) or as per the medical care provided. A note on this issue prepared by Dr. Nachiket Mor is at Annex 11.30.



CHAPTER 12

Education: Beyond Right to Education

12.0 Introduction

Education is relevant for improving the human capabilities. It plays an important role in human capital accumulation and raises awareness that leads to greater participation in civic life. Good quality human resources in developing regions are one of the key ingredients of economic growth and higher levels of living. Thus, while *basic education is a development constituent and hence an empowering entitlement, skills and higher education are particularly relevant as means of livelihood and growth acceleration in a knowledge driven economy.*

Maintaining uniformity in the *quality* of elementary education and universalising secondary education are the major challenges facing Maharashtra in addition to proper implementation of the Right to Education Act. One of the main thrust areas of the RTE Act is enrolling out of school children into school. Status, level and progress of learning outcomes also need critical attention in the context of RTE. Literacy rate, child school participation, governance, community mobilisation and reduction in the gender gap are some of the important aspects of educational attainment.

Regional imbalance cannot be understood in a limited economic sense, but it is a powerful instrument of emancipation of poor people across regions. RTE has ensured a certain level of inputs for student community irrespective of the geographical dispersion. However, it cannot be denied that major cities are preferred by the people from all other regions specially regions which are lagging behind. Probably the basis for making the choice is (i) quality inputs (ii) better prospects (in terms of placement/ livelihood) (iii) exposure to competitive environment and (iv) opportunities for overall personality development. Education is the basic and fundamental factor responsible for regional imbalance as the youngsters who once migrate for undertaking higher education ultimately settle down in advanced regions as they are fascinated by the higher standard of living there.

The specific objectives of this chapter are as follows:

1. To examine the status of regional imbalances or the level of backwardness in the field of education across the districts of Maharashtra. This is done at the school level education - primary and secondary, vocational education, higher and technical education.
2. To make suitable suggestions for policy changes in order to have equitable regional development including at the intra regional level.
3. To examine and to make proposal for improving status of women in education.

From the specific point of view of this report and to anticipate what is in the chapter, in sum we may say that given that on one hand the status of literacy does not show significant statistical variation

and RTE will take care of students up to standard eight and on the other hand liberal engineering and management education display excess supply; business as usual will help us to attain the required levels here. We need to focus only on quality of education in the aforementioned areas and affordable access to medical education apart from universalizing education from 8th to 10th standards, imparting vocational skills in an innovative mode and addressing the issue of tribal women's (and other special groups') basic literacy and education in a mission mode. At a more general level, universities with good quality research leading to innovation and knowledge will need special attention.

12.1 Review of Educational Achievements Across the State

In order to assess the level of regional imbalance or the levels of backwardness across the districts of Maharashtra in the education sector, there is a need to identify indicators which are reliable and data for which is readily available at the district level. Data for the indicators chosen should also be available on a periodic basis for policy review and assessment. The indicators chosen may be categorised as 'outcome' or 'attainment' indicators versus 'input' indicators. Outcomes are a result of several inputs and represent the final result of various policy interventions. Hence 'regional imbalance' and 'backwardness' may be measured in terms of 'outcome' indicators in education. Subsequently, an analysis of the 'input' indicators will indicate the infrastructural requirements to improve the outcome indicators.

Outcome indicators could be seen as follows:

1. General level of education (Literacy)
2. Education at the school level – primary and secondary
3. Vocational / skill education
4. Higher education
5. Technical education

12.1.1 General Level of Education (Literacy)

The indicator literacy rate has been used to identify general level of education and awareness. Literacy rates are an indicator of general well being and also an indicator of the quality of the workforce particularly if we are to reap the benefits of a demographic dividend. In particular, female literacy would indicate the level of societal development of a community or region. Literacy rates are available in the Census reports. Since the data from 2011 census is available for population aged more than 7 years, the indicator chosen has been literacy rates 7+. Also there may be marginal difference between 7+ literacy rate and adult literacy rate for population between 15 and 59 years (See Annex 12.1).

Recent data from 2011 Census show that the literacy rate (7+) for the state as a whole is increased from 76.9 percent in 2001 to 82.9 percent in 2011. Districts with higher literacy rates in 2001 like Mumbai, Mumbai Suburban and Nagpur continue to maintain their lead and remain at the top with literacy rate 88.5%, 90.9% and 89.5% respectively. The districts at the lower end continue to be the same in 2011 – the tribal districts of Nandurbar (63%) and

Gadchiroli (70.6%) have the lowest literacy rate across 35 districts of the state (See Annex 12.1).

The performance of the other districts which had 'lower than state average' literacy rates in 2001 continue to be below the state average. The performance of the northern districts of the state and Ahmednagar shows lower levels of improvement over the two Census reports. Thus, ***we have clearly hit the hard market and incremental improvements here will be attained only through locally focussed (special groups like the tribal people, women and minorities at taluka level) missions leveraging SSA funds. No additional funds from the State exchequer will be required.*** The observations below further underline our comments.

12.1.1.1 Key Observations

1. Districts with higher levels of literacy rates continue to maintain their lead position over the period 2001 and 2011.

It is also seen that the gap in literacy levels amongst the districts has narrowed in the past decade thanks to the series of government interventions through Central and State Government programs.

2. High levels of illiteracy in a few pockets shows that 'out of school' children still remain to be effectively pulled into the system.
3. Even though literacy rates are high, the absolute number of illiterates is also very high. This is not acceptable in a State like Maharashtra. The situation needs to be rectified through better utilization of resources and efficient policy implementation of the *existing* policies.
4. Illiteracy is higher among women and needs focussed and concerted attention in a mission mode, especially in pockets like Nandurbar.
5. Literacy rates across occupational groups would give more insight into pockets of illiteracy. If literacy levels are to be improved even in better off districts there exists a need to examine where or in which occupational group does illiteracy exist. Migrants casual labour, women and tribal groups should be given the highest priority in improving their literacy level; in fact one can think about incorporating this aspect in *mission mode designed with known, innovative, out of box modes.*
6. The 2011 Census provides data on literacy rates across talukas of each individual district. What one observes is that even within advanced districts on the indicator literacy rate, there exist several talukas which are backward on the said indicator. Take for example, Thane with overall literacy rate of 86.2 percent in 2011, the taluka Talasari records a literacy rate of 58.9 percent, Vikramgad 57.8 percent, Jawhar 58.6 percent and Mokhada 58.4 percent. Female literacy rates in these districts range from 46 to 51 percent. *These are tribal districts in the main and special recommendations for them are required* (refer to the Tribal chapter).

7. The Census defines a person aged seven and above, who can both read and write with understanding in any language as literate. A person who can only read but cannot write is not literate. (www.censusindia.gov.in/2011). The scope of this definition needs to be expanded to mean 'functional literacy'.
8. The last mile and difficult pockets that remain, require ***an extension and informal approach enabled through the instrument of civil society organs***. The clinical approach that was embodied in the municipal schools' (and ZP) structure has not delivered and is anyway on the decline. An extension approach therefore is called for. The private schools' structure is not big enough to take care of all the potential recipients and is not affordable for all. ***This issue needs to be looked at in a way that is integrated with livelihood issue. Thus, child care system has to go with education hand in hand. Out of box thinking is called for and the grass root NGOs will have to be recognized and empowered to use general guidance in terms of content and skills to deliver.*** This alone will ensure comfort to the children in learning using idioms and montages that they can identify with.

Thus, as mentioned earlier, as far as literacy is concerned except for women and other vulnerable groups, business as usual with greater efficiency will do the job. The women and vulnerable sections require out of box solutions in a mission mode.

12.1.2 Education at the School Level – Primary and Secondary

Data on enrolment in schools is available from the Directorate of Education, Pune. Enrolment as a proportion of the population in the relevant age group gives an indication of the number of children going to school and by implication 'children not in school and not enrolled' in that particular age group. The population in the relevant age group has been taken from Census data.

Enrollment in Standard I to Standard V as a proportion of population in the relevant age group i.e. 5-10 years, 2001 data indicates children availing of primary schooling in the state from which non-enrollment in schools can be derived. Non-enrollment even at the primary level is very high in many districts. The data for 2011 Census is not available and the earlier data appears unreliable and hence it is not considered for analysis.

Non-enrollment in standard VIII-X as a proportion of population in 13-15 years rises across all districts.

Possibly a better outcome indicator representing achievement of formal schooling would be the dropout rate (Annex 12.2). This indicator is based on enrollment data and hence may give misleading results eg., Ratnagiri, Pune, Washim, Amravati and Wardha have higher enrolment ratios in Standard V than in Standard I. However, the data shows that in several districts the dropout rate at the primary level (I-V) itself is more than 25 percent. These are districts which are generally considered as backward districts on economic indicators such as per capita income.

Between standard I-VII the dropout rate increases across all districts (Annex 12.2). Even those districts which showed over-enrollment in Standard V do not show over enrollment in Standard VII.

The dropout rate increases further in Standard X with about 50 percent of students dropping out of school in Nandurbar, Dhule and most districts of Marathwada region in 2010. Column 6 in Annex 12.3 shows the percentage of students who enrolled in Class I ten years ago i.e. in 2001 but did not appear for the public examination SSC in March 2011. The implication of this is that between 35 to over 50 percent of students do not complete the cycle of schooling in several districts of Maharashtra. What is more significant is that most of these districts are generally considered as backward districts when measured on various economic indicators.

The reasons for not attending school have been given by NSSO. The 64th Round conducted in 2007-08 in the state of Maharashtra provide the following information (See Table 12.1) on reasons for not attending school. The results are along the expected lines and have no surprises.

Table 12.1
Reasons for Not Attending School (2007-08)

Sr. No.	Reason for not attending school	Percent	Percent
1	2	3	4
1	Attitude towards education		68.6
A	Parents not interested in studies	36.5	
B	Education not considered necessary	28.9	
C	No tradition in community	3.2	
2	Economic reasons		15.8
A	Financial constraints	9.1	
B	To attend other domestic chores	3.2	
C	To work for wage/salary	0.2	
D	To look after younger siblings	0.7	
E	For participating in other economic activities	1.5	
F	For helping in household enterprises	1.1	
3	Access		2.1
A	School is far away	1.9	
B	Inadequate number of teachers	0.0	
C	Timing of educational institution not suitable	0.2	
D	Language/ medium of instruction not familiar	0.0	
4	Others	13.5	13.5
5	Total	100.0	100.0

Source: Government of Maharashtra, A Report on Participation and Expenditure on Education Based on Data Collected in State Sample of 64th Round of National Sample Survey (July, 2007 to June, 2008).

It appears from the 64th Round of NSSO that – rather unsurprisingly – the main overriding reason (68.5%) for not going to school is attitude. The attitude towards education is that education is not important. Education is not a felt need. This attitude may perhaps be arising from various characteristics of school education, namely (1) school is not interesting (2) school education does not equip the child for life and (3) school education does not provide the necessary skills for livelihood purposes. Economic constraints appear to be the next most important reason with access or non-availability of school being of marginal significance, though quality of infrastructure can play a significant role in making school an interesting place to the child. *Government policy has succeeded in providing access, however economic reasons continued to play an important role in school dropout. Clearly this is a problem that is well documented in the literature and there are no quick fixes. Concerted efforts at working at the socio-cultural issues underlying the attitudes, improving well known methods for quality improvement and finally improvement of household incomes will change this scenario. It is hoped that after the initial teething trouble with the RTE, its implementation will be more efficient and effective.*

12.1.2.1 Gender Differences in Participation in Education

There exist large differences in participation in education between girls and boys.

Gender Gaps in Education (GGE)- a simple index of gender gaps in education-has been worked out. The indicators used are gender gap in literacy (percent difference between male and female literacy rates), gender gap in enrollment (percent difference between enrollment of boys and girls at primary and upper primary school level) and gender gap in completing the cycle of schooling (students who appear for standard X examination as percent of those who enrolled in standard I, 10 years ago). A simple average of the scores shows the position of each district in the gender differences in education (Annex 12.4). The table at Annex 12.4 highlights that the gender gaps in education are the higher in Mumbai, several districts of Marathwada region and lower in the region of Vidarbha.

12.1.2.2 Post School Education

The number of children who attend school, complete the cycle of primary education and go further to take advantage of vocational and higher education needs to be examined. NSSO data from the 64th Round, (2007-08) in Table 12.2 provides details on completion of various levels of education for different expenditure groups for the state as a whole. Note that expenditure classes may be taken as a proxy for income categories.

Table 12.2
Percentage Distribution of Persons by Level of Education for Each Decile Class of Monthly Per Capita Consumer Expenditure (MPCE), 2007-08

Sr. No.	Level of education	MPCE percentile classes		
		0-30	30-80	80-100
1	2	3	4	5
1	Not literate	40.1	28.6	12.8
2	Literate without formal schooling	0.5	0.4	0.2
3	Below primary	14.2	11.0	7.9
4	Primary	17.4	16.6	10.3
5	Middle	17.5	21.8	18.6
6	Secondary	6.3	11.4	16.2
7	Higher Secondary	2.7	6.1	11.9
8	Diploma/Certificate	0.3	0.7	2.9
9	Graduate	0.8	2.7	14.9
10	Post graduate	0.1	0.7	4.5
All		100	100	100

Source: Government of Maharashtra, A Report on Participation and Expenditure on Education Based on Data Collected in State Sample of 64th Round of National Sample Survey (July, 2007 to June, 2008).

The table depicts a picture that is intuitively obvious (there are no surprises). One observes that large number of illiterates, literate but not completed primary education and primary educated belong to the lower expenditure (income) categories. This picture changes at the secondary and post secondary levels of education. NSSO data highlights that secondary and higher secondary education is availed by the middle and upper expenditure categories (and implicitly better off) of people.

To sum up, economic status is one of the important determinants for the level of education of children. Post school education which may include higher secondary education, diploma/ certificate, graduation and post graduation are sought and acquired by children belonging to higher expenditure or income groups. *The observation is that post school education which provides with skill sets for livelihood needs to be made more widespread amongst lower income/expenditure groups. Hence there is a need to include vocational education at the school level itself.*

12.1.2.3 Validating Our Views in Earlier Sections : Academic Exercises

In order to check whether we were on the right track as far as our conclusions above are concerned we decided to conduct two academic exercises. We constructed two indices, EBM and the other which we have termed as education index (below). The

Education Backwardness Measure (EBM) represents the imbalance in education using 'outcome' indicators at the school level which include primary and secondary school education. The methodology is that used by UNDP for calculating the Human Development Index. The results have been presented in Table 12.3 and Figure 12.1. A cursory glance at the numbers involved shows that there is not much of (statistically insignificant) variation except what is localized and can be explained in terms of Tribal, women, migrant labour and other vulnerable groups. Quality and infrastructure could possibly emerge as focal issues which do not require additional plan resources but they require only well known and in some cases extant policies, to be implemented more efficiently. This is in conformity with the views expressed by us in the earlier sections.

We give below information on largely input based education index that was computed by Ms. Mala Lalvani in her study conducted for our committee (data available with the committee). We acknowledge and discuss later, the fact that too much emphasis on physical inputs is not the way to go and we need to focus more on enhancing quality. This *Education Index* has three components viz., pupil-teacher ratio, student-classroom ratio and female literacy rate. (pupil-teacher ratio and student-classroom ratio are both inverse indices and enter the index with equal weights). Konkan excluding Mumbai is the best performer in this index. When Mumbai is included Konkan falls to second rank with Nagpur division being the best performer. The ratio of Maximum to Minimum is just under 2 and the Coefficient of Variation is 14%. Here too our views are validated. The little variation observable is due to the fact that we have taken female literacy as one of the components in constructing the index.

Table 12.3
Education Index and its Components (Division and Region wise)

	EDU-index	Pupil Teacher Ratio	Student Classroom Ratio	Female Literacy Rate (2011 Census)
1	2	3	4	5
Aurangabad	279.3	29.6	30.8	67.7
Konkan	299.1	28.5	30.6	79.1
Nashik	263.7	31.8	33.8	67.1
Pune	304.7	27.9	27.9	75.0
Amravati	292.8	29.9	30.1	76.6
Nagpur	329.4	24.6	24.7	73.5
Konkan Excluding Mumbai	337.3	24.4	24.5	78.0
ROM	288.9	28.3	29.0	73.0
Marathwada	279.3	29.6	30.8	67.7
Vidarbha	310.8	27.0	27.1	74.9

Source : Provided by the education sub-group of the committee.

Figure 12.1
Education Index



Source :- Provided by the education sub-group of the committee.

The above exposition underlines and validates what we have said upfront about literacy and school education in the context of regional imbalances in education as they are manifested in Maharashtra. It is obvious that there are pockets where the performance has been poor (local spaces and groups) and this will have to be treated in a focussed and mission mode fashion, for the rest, with business as usual strategies modified a little but implemented rather more efficiently will do the job. ***To repeat, this does not require any additional plan resources from the State but it requires concerted efforts and implementation of extant policies in a focused manner for improving quality.*** We will be looking (later in the chapter) upon education not merely as a means of improving life skills but more importantly as a tool for enhancing livelihood opportunities. Hence, the discussion on regional imbalances in education should now be enlarged to cover not only the completion of school education starting from primary to secondary (high school) education but also cover post-school education in those areas of knowledge and skill acquisition which empower individuals for better livelihood opportunities. **The report recommends, in the spirit of RTE+, that completion of Standard X be looked upon as the minimum level of schooling for the relevant cohort and should be achieved for a progressive State like Maharashtra; the deficit in this regard at the regional level will yield us a variable that will go into the education component of development deficit index as we will explain later.** Before leaving the discussion on school education, we now underline the need for overhauling the education system.

12.1.2.4 Need for Overhauling School Education System

The school curriculum particularly at the VIIIth, IXth and Xth standards needs to be overhauled to make education relevant for livelihood purposes. The Draft National

12th Five Year Plan has also indicated that there is a need to integrate and increase the content of vocational education at the school level so that education can be taken to the masses. This has to be done within the framework provided by the National Vocational Curriculum Certification which has proposed this element as an integrated component of mainstream education so that the perceived social stigma attached to vocational versus mainstream education is vanquished.

The state of infrastructure needs attention as many schools have no drinking water facilities, no toilet facilities, not to speak about separate toilet facilities for girls, absence of library with well stocked books, playgrounds and so on. Improvement of the quality of education is strongly related to the quality of physical space, textual materials, classroom procedures, academic support to teachers, assessment procedures and community involvement which need support. The school infrastructure needs to be improved keeping in mind the RTE norms which need to be revised on a continuous basis to improve the quality of education. Whilst there is some improvement, it may be worth while studying some of the good practices followed by some of the other States and obtaining convergence of various relevant CSSs to get the requisite resources and attain the objective.

Modernising the teaching pedagogy is equally important. A large proportion of schools do not meet the pupil teacher ratio norms laid down under the Right to Education Act. There is need to work out the requirement of number of teachers at the district level – posts need to be created and filled up as per legal requirements. In this context, **there is an urgent need to optimally leverage the IT/ITES as well as virtual classroom methodologies for greater coverage and effectiveness. As we have hinted above the main concerns must now shift from quantity (access) to quality and relevance.** There is a large number of studies and methodologies available in a ready to use platform. This will involve massive teacher re-training wherein they will have to be tutors and help students imbibe the skills of problem solving rather than use the classical pedagogy. They must be comfortable with and proficient in the use of IT tools and speak the language that the modern students (even in backward areas can identify with). This is a well researched arena and one of the points that has been made time and again in the literature, has to do with cultural-language differences so that the idiom of teaching is suitably modified. This is another illustration of our decentralized strategy that we recommend and also underlines the principle that one size does not fit all. In particular, the State will have to invest directly in local language software (OCR) so as to use the broad band connectivity in which large amount of money is being invested by the Centre. Thus, while we emphasize the quality aspect as being of supreme importance, we realize that it is generally applicable across space and regions. We do believe that it applies with greater force to backward region students. Also, once again the point is that this is not an epistemic or conceptual issue but rather an issue of implementation and there is a movement along these lines even in the extant policy designs.

12.1.3 Vocational Skill Education: Employability a Serious Concern

The issue of inadequacy of the pass outs from the portals of education has been discussed time and again. The stakeholders i.e. industry, trade, commerce and even academicians have unanimously agreed upon 'employability' in the new entrants as the missing quality. This is true even of students with higher professional training. All the players (prospective employers) have to be engaged seriously in the design of the scope and content of educational programs. The enabling provision such as National Vocational Curriculum Certification by AICTE is already in place. We shall also be making recommendations in this regard later in the chapter. Again niche areas will have to be identified and programs that fit the particular requirements will have to be fashioned depending on spatial, group characteristics. This will be the only way to ensure sustainable livelihoods empowerment for the students. The availability of relevant educational institutions determines access to acquiring skills which contribute to improving income levels. Annex 12.5 provides intake capacity of ITIs (in both public and private sector) across the districts of Maharashtra. The number of institutes per lakh of population in the age group 15 – 24 years should be a proxy indicator of access to skill education infrastructure facilities. The number of students per ITI is much higher in the districts of Mumbai suburban and Thane as compared to other districts. However, let us hasten to add that we need to move away from the ITI model which has serious well documented deficiencies and has failed to deliver. We use these numbers for illustrative purposes only and because there is no alternative (TINA) in terms of data availability. We do recognize that it is not lack of infrastructure facilities in the narrow sense alone or lack of availability of institutes *per se* that is the reason behind lower levels of acquisition of skills. The reason possibly lies in the quality and the relevance of the courses offered by these institutes. Private sector ITIs are more in the economically/industrially advanced districts while there are almost none in backward districts.

Two points need to be made. One, we consider a suitably derived variable based on the regional availability of ITIs only for the purposes of allocation formula. Two, given the design, functioning and relevance of ITIs and the current aspirations of children especially in backward regions we do not recommend more of the same. Indeed recognizing that ITIs provide close ended (and often irrelevant) stream of education, we will be recommending better vehicles for vocational/ skill imparting institutions such as community colleges that provide region specific courses and provide the possibility of seamless entry into the mainstream education.

12.1.3.1 Need for Vocational Skills

Vocational skills should be introduced at the school level to make school education more utility oriented. Vocational education should be started by the Government particularly in districts where the dropout rate at the secondary school level is high. It is clearly seen that it is not the lack of institutes *per se* that is the cause of regional imbalance in acquiring vocational education but it is possibly the quality of the courses offered by these institutes as well as the quality of teaching which are contributing to regional imbalance in acquisition of these skill sets. Since the ITI

and vocational education courses are not necessarily market driven, private sector participation in this field will play an important role. The present framework of private participation in vocational education in ITI training needs to be examined with a view to promoting increased participation particularly with corporate houses setting up lower levels of skills imparting educational institutions. Certification of vocational course will bring it in tune with the National Vocational Education Qualifications Framework (NVEQF), which the Human Resource Development (HRD) ministry plans to introduce across the country from 2014. The proposed legislative bill Maharashtra Vocational and Education Training (MVET) Act, which promises sweeping reforms in the way vocational education is to be offered in the state should be given high priority.

12.1.3.2 Community Colleges-A Much Needed Initiative for Empowerment

Community College (CC) is a new and challenging concept emerging in our country. It provides flexible education targeted towards skill training leading to gainful employment. The target group of learners comprise drop-outs who do not or can not pursue higher education. In short CCs are critical and crucial instruments of livelihood empowerment of the youth as also sources of economic growth. They offer a curriculum fitted to the needs of the community. CCs can serve the disproportionate numbers of poor, working class, non - traditional and minority students.

CCs are an alternative system of education which aims to empower individuals through appropriate skill development leading to gainful employment in collaboration with the local industry and community. They offer the advantage of tailoring programmes to local needs and state-based requirements by using approaches that will be most acceptable to workers in the given community/situation.

CCs generally will have a 2-year curriculum that either leads to (1) an Associate Degree for transfer to an undergraduate college or (2) the students' direct entry into any occupation or trade. These colleges are a source of economic growth because they provide an educated and skilled workforce that improves the quality of life for individuals, students, communities, and the nation.

It may be noted that the AICTE has a scheme of Community Polytechnic to upgrade the skill sets of lowly paid semi skilled workers in the unorganised sector. It has been felt that in order to improve educational attainment, betterment of livelihood opportunities is essential, particularly in the educationally backward districts. The Community Polytechnic Scheme envisages the setting up of training networks in the rural areas by the focal institute. This idea can be expanded to set up Community Colleges/Centres through ITIs and Engineering/ Technology institutes to upgrade skills of local semi skilled workers. Appropriate financial support may be provided from the State funds. Private sector participation may also be enabled. The

important feature of the Community Colleges is that they provide seamless entry into the mainstream degree education under certain conditions. This fits well with the aspirations of the present youth. This also avoids the social taboo associated with ITI type courses which are a dead end and create a new caste system amongst the educated.

There is a serious need to look at the pre and post degree education enrollment in various streams such as Science, Commerce and Arts from the point of view of utility of education and its responsiveness to livelihood needs. Special support needs to be given to promote sciences and commerce to remove regional imbalances.

There is greater private participation in higher and professional education. The outcome has generally been beneficial though in backward regions the benefits are not comparable with those of the advanced regions. The constraints faced by the private sector in backward areas need to be removed by giving financial and fiscal incentives. The new Private Universities Bill, which is likely to be enacted, should provide incentives for encouraging entry of such universities in the backward areas.

To ensure better quality, market relevant curricula and pedagogy improvements are needed and incentives should be extended to the private sector to play a major role in this area. ***The committee recommends that one community college should be created for every block. This exercise should be undertaken every five years. RUSA funds should be used to the maximum extent apart from State's own funds for this purpose.***

12.1.3.3 Skill Development – The Growth Imperative

Employability, as we have already mentioned, is a serious concern even amongst the so called educated, even amongst those with technical education and thus needs a focussed attention. Traditional universities have become too large to be managed and hence concept of Technological Universities with a difference (with special reference to employability) needs to be introduced across the state.

Industries are to be proactively involved in nurturing & supporting the quality enhancement initiatives in academic institution. There has to be complementary roles for industry and institutions. Internships concepts should be introduced in curriculum and guest lectures by industry personnel to be encouraged.

Curriculum of India is not competitive enough and lot of changes are to be made in consultation with industries. Strong foundation on Science, Physics, Chemistry, Mathematics, Statistics linked with applications is need of the hour. Soft skill development and use of ICT tools along with provision of skill based education needs to be encouraged and industry around the institute should become laboratories. Economy should develop exploitation of opportunities creating employment. Concept of research parks growing globally should be introduced in State. Industries would park facilities in research parks.

In general, concern for quality is lost in the increase of quantity of professional institutions, thereby increasing unemployment of graduates without quick relief to mitigate their sufferings in the job market of the country. Here, colleges of various courses churning out thousands of graduates seeking jobs in vain due to lack of employability, communication skill and entrepreneurship quality. Thus the drawbacks of such an education system underscore the need for reforms to make it worthwhile and beneficial to all concerned.

12.1.4 Higher Education

Taking these trends further, it may be observed that the number of students opting for streams of education which may be considered to be skill oriented or job oriented such as Science and Commerce is higher in universities located in Mumbai and Pune which are considered to be industrially and commercially advanced cities. The number of students opting for subjects in the Arts stream is higher in the Universities belonging to other regions. (See Table 12.4) The subjects in the Arts faculty (as currently taught given the syllabi that are designed) are generally lighter, easier to get a degree and not job-oriented. Possibly the predominant attitude is 'to get a degree' as those opting for higher education are generally the ones who belong to higher expenditure categories and have their own business in agriculture or industrial sector. If more people from the lower expenditure category were to opt for higher education, they would possibly seek job-oriented skills and degrees.

Table 12.4
Enrolment in Degree Colleges (Total of 1st, 2nd, 3rd year), 2011-12

Sr. No.	University/Region	Enrollment in Various Streams as percent of Total Enrollment	
		Science +Commerce	Arts
1	2	3	4
1	Mumbai University	63	21
2	Pune University	55	33
3	Solapur University	30	47
4	Shivaji University, Kolhapur	43	52
5	BAM University, Aurangabad	35	47
6	SRTM University Nanded	31	36
7	Sant Gadge Baba Amravati University	36	44
8	RTMN Nagpur University	33	41
9	Northern Maharashtra, Jalgaon	37	48

Note: Figures may not add to 100 as the Balance Enrollment is in Other Streams.

Source: Directorate of Technical and Higher Education, Maharashtra State, GoM

Annex 12.6 shows access to university level education in all fields including Science, Commerce, Arts, Law, Education and others. This has been worked out with the help of a ratio:

the number of students who appear for the Standard X examination to intake capacity in government aided universities. For Mumbai this figure is low at 3.9 and is high for Marathawada at 13. It may be noted that Konkan does not have a University.

12.1.4.1 Revival of Higher Education and University System

Higher educational system in the State of Maharashtra is – to put it mildly – in doldrums. Given our vision of Maharashtra as at the front of India's surge in knowledge economy (given the history and its production structure, Maharashtra has a comparative advantage) it is essential that strategic intervention in this arena is undertaken urgently. The issues here do not pose an epistemic or a conceptual challenge; indeed they are well known and documented. Some resources and the political will to implement the reforms is what is required. It must be mentioned here that the interventions do not necessarily have a huge regional dimension, but its relevance springs from the crucial role it will play in growth acceleration which in turn will supply us with the requisite public resources to remedy regional imbalance. Further, here too, quality is of essence and that will take some doing. Especially, in the context of liberal education, we place a great emphasis on its role (currently not in evidence) as creating and nurturing social and political leadership. Given our emphasis on political aspects as well as social capital in regional imbalance, this point becomes rather important especially and with greater force for the students from backward regions.

12.1.4.2 The Committees

As mentioned earlier, we have no dearth of understanding of the issues here. Starting from Kothari Commission (in mid-sixties) but more importantly the recent National Knowledge Commission report and the Yashpal Committee report have made significant and important recommendations. Closer at home, Maharashtra has had three committees looking at slightly different aspects of the core issues of higher education. These were headed by eminent persons like Dr. Kakodkar, Dr. Nigvekar and Dr. Takawale. Now there is a fourth committee set up to reconcile the three. The basic issues that are important and that were addressed by these committees had to do with **Quality, Autonomy, Adequacy, and Flexibility**. The key points in their recommendations had to do with bestowing autonomy through reduction of political interference, both external through political parties and the government as well as the intra organizational politics by the vested interests in the authorities/ courts of the universities, reducing the size of the universities (number of students, spatial jurisdiction) to more manageable levels, introducing well known pedagogic and evaluation reforms such as choice based credit system, interacting with industry for relevant course content, open source material, and exploiting IT/ITES platforms. Let us recognize that world class/ excellent institutions are by definition few and cannot be universal. It is necessary to identify these and nurture them whilst pulling up others to adequate levels. This would

require the support from the government in terms of filling up teacher vacancies, granting non-salary grants. In short, it will require the government to (taking the fill it; shut it; forget it approach) supervise from a distance (NO interference and complete transparency in dealings and appointments, including very importantly, those of the Vice-Chancellors) while providing all the necessary support. Finally, there are lot of relevant bills pending at the Central and State levels. Even at the State level an important Private Universities Bill is pending for long. These need to be passed post haste. Thus, while endorsing the recommendations of the aforesaid committees, we urge the State Government to move fast on the implementation front.

Recognizing the fact that 90% of the higher education is being imparted through the State Universities with only 10% of Central funding the 12th FYP is about to launch RUSA (Rashtriya Uccha Shiksha Abhiyaan) which is an umbrella CSS for the higher education sector meant for a huge amount of strategic funding to state universities. It is a scheme that follows principles quite like our committee and recognizes heterogeneity (one size doesn't fit all). It is important that Maharashtra takes maximum advantage of this scheme (traditionally Maharashtra has been a laggard amongst the 14 major states on this score). One of the prerequisites is to have a **functioning** State Council for Higher Education and well formulated State Plan for Higher Education sector. As a progressive state we believe that the State Government apart from optimally sourcing funds from the Central Government (MHRD/UGC) should on its part position itself to face the challenges of knowledge economy and the implication for higher education thereof (especially in the arenas of frontier sciences and technology). We would recommend that the State provides a sum of around 1000 crores for expansion and modernization of extant university education. In all of what we have said, we would like to reiterate that while resources are important, good governance (design and implementation) is the key intervention required.

12.1.4.3 Issue of Governance in Education

In all the regions governance is the central issue at school level. Committee got feedback about poor functioning of corporation and ZP schools. The quality of education, attendance of both teachers and pupils, the vacancies that go unfilled are all matters of common knowledge and are in need of urgent attention. Perhaps as an aside, we may mention that we could explore the possibility of introducing voucher scheme and students should be given freedom to take admission in non government schools (Schools of their own choice).

Maharashtra as a progressive State needs to provide platform for the children for undertaking education up to Xth standard. In order to equalise access to education up-to Xth standard the necessary resources should be provided to all the districts.

To reiterate, even more important than the resources, governance is perhaps the key. Governance here has to be related to the regulatory framework, as articulated, as

well as the way it is put into practice. It also deals with the building of capacity and encouraging, enabling and empowering private players. So, a well designed and committed expenditure plan along with (most importantly) a bouquet of ingeniously designed enabling and empowering governance initiatives to achieve, efficiency in state institutions as well as maximum private participation in a flexible mode is the way to go.

Workload of teachers as well as the type and wage contracting while hiring the teachers will need to be flexible. The current practice with regard to the pay structure as well as 'clerical' work ethic is not conducive to face the current challenges. There are no incentives for faculty with quality and excellence, to self select themselves in this sector.

We need to set up *institutions of excellence* if we want to cater to the kind of economy for Maharashtra that we have been talking about. The *huge infrastructural needs* mean that the state has to provide the requisite resources. Also the human resources required will have to be of a very high quality. That will imply that the wage contracts will have to match the best alternatives available. The government sector will have to identify and focus on *nurturing few such institutions and back it with requisite resources*.

There is a huge potential for **e-learning** that needs to be tapped. Again the skill sets and economically viable solutions exist that are waiting to be exploited. Here too the private-public as well as formal and informal sectors will have to forge synergistic relationships. It is advised that this be done as far as possible outside the formal governmental sector (but indeed with its help) in a mission mode.

12.1.5 Technical Education

In technical education we have considered engineering colleges both degree and diploma. Availability of seats was then derived by examining the ratio of students appearing for Standard X examination to the intake capacity of engineering colleges/institutes. The availability of seats varies widely from as low as 2.7 aspirant students per seat in Nagpur district to as high as 17.8 aspirants to a seat in Akola district (we are not considering Mumbai suburban district) (See Annex 12.7). In a very broad sense, the total number of Std. X students per engineering seat is high for the districts of Marathwada and some districts of Vidarbha as well as Konkan, as compared to the districts of Western Maharashtra. The strategic intervention could be in terms of increasing the colleges locally, but given the situation of overall excess of supply and the fact that DTE centrally grants admissions, it may be better to facilitate the admissions to the students from backward regions via quotas, so that they may opt for the education they feel the need for. Apart from admission quotas, the interventions would need to be in the nature of fee subsidy and or scholarships (as in the case of SC/STs) as well as provision for hostels accommodation. The moot question here really is of quality of the programs on offer. This is a generic question and apart from known filters, markets quickly are able to discern and signal. The Directorate of Technical Education categorizes the engineering

colleges based on the status of infrastructure and the quality of education each of these colleges impart. The categorisation done by DTE should be carried further and a program for upgradation of the infrastructure of these colleges should be mandated. *As far as the management schools are concerned, they are best left as they are and really no intervention is called for. The market currently is at work trying to cut out the non-performers.*

12.1.6 Medical Education

Annex 12.8 indicates the number of students appearing for Standard X examination per medical seat. It may be observed that the figure representing availability of a medical seat is the lowest in Konkan division at 292 students per medical seat while it is lower in all other regions. We may point out the obvious in that the above being a ratio may be affected by both the numerator and the denominator.

All 43 medical college & hospitals in Maharashtra State together have 32,455 beds. The beds in medical college hospitals assure provision of basic specialities for differentiation from usual bed in normal hospitals; the term teaching beds is used here in the following paragraph. The state average is 29 teaching beds per lakh population. Normally each medical college is expected to have minimum 500 beds. Any district having population more than 18 lakhs is suitable for establishing a medical college.

For starting medical colleges in all the districts having population more than 18 lakhs and teaching bed ratio population ratio far less than state average, can be grouped under three categories Beed, Nanded and Yavatmal districts have government medical colleges but the beds in the hospitals in these districts are far less than the state average. The bed strength in the medical colleges from these districts may be increased and proportionately the admissions to the medical colleges can also be increased. Amravati, Jalgaon, Nashik and Raigarh districts have private medical college & hospitals. In these districts there are two options for Government of Maharashtra. First option is Government of Maharashtra can start new medical college & hospitals in these districts. Second option is to encourage the private medical college & hospitals to increase their beds and consequently the admissions to the medical colleges. Third category of districts includes Jalna, Parbhani, Buldana and Chandrapur which do not have medical college & hospitals at all. Medical college & hospitals may be started by Government of Maharashtra on priority basis.

Like in the case of engineering colleges since there is centralized admission, one may not on that count alone argue for setting up of a college in each district. However, ***in this case, direct or indirect public intervention is necessary since the externalities due to setting up of a teaching medical college along with the associated hospital beds lead to natural improvement of health care facilities and standards in the surrounding areas.*** Thus, the government may either set up such colleges and a university in the backward regions, by itself or at least provide grants to the private medical colleges of repute/ quality so that it can render the quality at medical education altogether more affordable. Not just the degree education here but also the ancillary diplomas and certificates will provide fillip to the scarcity of human power in these vocations.

Thus, all medical colleges and districts in general must have attached nursing colleges. Nursing colleges from Government sector may increase their seats in order to fulfil the demands of ailing population. B.Sc. Community Health course should be introduced for supplementing the existing manpower in health services. After completion of the course they should be permitted by the competent authority to operate as licensed practitioners.

12.1.7 Agricultural Education

Agriculture education (that builds capacity for *new* agriculture and its extension) is essential component of agriculture growth in the state. New agriculture can produce results provided educated and skilled human resources enter the agriculture sector. In this context there is an urgent need to expand agriculture education by opening a new university, colleges and schools. Maharashtra has nine agro-climatic zones and agriculture in each of this zone has different requirements. Agriculture research and education needs to be focused zone wise. The research and by extension, teaching needs to focus on new agricultural processes (rather than more of the same; see the agriculture chapter in our report), agro-processes and technology related to niche areas of relevance to the particular regions. This apart, as universities they would continue their research in general areas as well as networking with other universities. Present agricultural universities in Konkan, Western Maharashtra and Marathwada have infrastructure by and large to cater to needs of agro-climatic zones in the region, however, Eastern and Western Vidarbha have absolutely different agro-climatic conditions.

Therefore one more agriculture university for Eastern Vidarbha is essential for growth of the Eastern Vidarbha region. This can be located either at Gadchiroli or Sindhewahi. There should be an integral component related to Forestry (teaching and researching forests as a productive resource; indeed one could consider a full-fledged Forestry University). It is also essential to have facilities for agricultural education at each taluka as well as agro-vocational courses available through the community colleges.

Maharashtra state has about 55% population residing in rural area, dependent on agriculture directly or indirectly. Agriculture education at higher level (degree) and lower level (diploma/certificate) is relatively poor across the regions with only 3.3% students passed in HSC with science streams go for agriculture degree and 1.2% students passed in SSC enter in Agriculture Technology School (ATS). Although agriculture and allied activities are major source of employment for rural population, the matching education facilities and infrastructure are absolutely inadequate. The figures also indicate that students opting for science stream are 25% in RoM, 31% in Marathwada and 29% in Vidarbha. Intake capacity of agriculture and allied degrees is only 3.3% at state level and 2.5 to 6.8% in regions.

12.1.7.1 Agriculture Research

Agriculture research infrastructure is backbone of agriculture development in the state. Present research centres established by the state indicate western Maharashtra has one research station for 1.53 lakh ha, Marathwada for 1.77 lakh ha and Vidarbha for 2.63 lakh ha. Konkan has relatively better infrastructure for research. The data indicates that Vidarbha region needs more focus on establishment of new research

centres as compared to other regions. These research centres could now be dovetailed with the community colleges and function as effective extension centres of the extant universities. It is suggested that strategic and problem oriented research should be undertaken by the agricultural universities (for which additional funding may be provided) rather than currently undertaken research only of academic importance. In doing so it is essential that ITES should be leveraged to the maximum extent so that the entire paraphernalia of establishment is not called for. For details about the relevant research agenda, please refer to the agriculture chapter in our report.

Agriculture and allied sectors have very large potential for employment and with new agricultural initiatives will need very specialized skills in operation, management, repair & maintenance, seeds, nursery, plant protection, post harvest and processes, livestock management, poultry, dairy and other enterprises. ***Each region shall have one VATI with location and trade specific vocational training ranging from 4 weeks to 2 years duration, with adequate intake capacity in each trade. VATI with adequate resources will be ideal in each region.***

12.1.8 Education of Tribal People:

Education in tribal area and of tribal people must focus on imparting relevant knowledge and necessary skills. The purpose is to bring them into mainstream. However, they should not be alienated from their own soil in search of employment. Entrepreneurial development shall be focus of this endeavour.

To make the education system meaningful the curriculum must be interlinked with the societal issues. The following courses/study centres seem to be appropriate:

1. Degree/Diploma in Social Work
2. P.G. Course in Management of Social Service Organization
3. Degree Course in Anthropology
4. Diploma in Mining, Minerals/Geology
5. Study Centres for: (a) Analyzing the issue of Naxalism (b) Forest Development (c) Tourism (d) Health Workers (e) Fishery and (f) Local Administrators.
6. Educational Development Plan for MFP.

Recently Gondwana University in Gadchiroli bifurcated from RTM Nagpur University, Nagpur has been established. In order to cater to the needs of development of the region specifically some courses on the basis of the resource endowment and available local expertise can be introduced. A separate Department of Social Work needs to be established under which Diploma and Degree Courses and Post Graduate Course in Management of Social Service Organisations for the students can specially be framed. Tribal Study Centre can also be established and courses on Anthropology and Mining Minerals would be useful for the stakeholders and ultimately for the development of the region. Separate department for

understanding the intricacies of the issues and finding alternative solutions to the problems of Left Wing Extremism on the lines of Nagaland and Mizoram would be useful to develop positive thinking in the young minds of the region. There can be a paradigm shift from the current destructive activities to the constructive once. High Infant Mortality Rate and malnutrition are the major constraints in improving the quality of life in Gadchiroli district. Studies can be conducted especially by the local researchers to resolve these issues. Bio Diversity and Forest Tourism are other significant aspects of Gadchiroli. These areas can also be exploited by establishing study centres. Entrepreneurial skills in a cooperative mould can also be developed by focussing on minor forest produce of the region like bamboo handicrafts/cane work, sericulture, honey collection, gum, and other herbal medicinal plants. We would leave this section by referring to the 'Tribal' chapter where we have elaborated on the educational aspects in greater detail.

12.2 Beyond RTE – Quality of Education

Granted that RTE is a right step and will stabilize after the initial teething trouble, we now need to focus on the quality of education. Unfortunately, in most discussions on regional imbalance in education or otherwise, we focus on physical quantum of infrastructure and the expenditures thereof (inputs) and tend to lose sight of quality which really determines outcomes. It is well accepted that to ensure quality education in schools, going to school should be a motivating experience for the child and the strategy to achieve this should incorporate those elements which stimulate curiosity, ensure participatory learning, help develop relevant life skills and create child friendly, hygienic, aesthetic and pleasant environment. *These are issues which are well understood in the literature and so are the solutions. The need is to show the requisite political will to implement in a concerted and strategic fashion.*

In the context of regional imbalance, we would like to look at quality in relation to attainment of knowledge as against learning goals and relevance of such knowledge to life skills and employability. We have not come across indicators which would reflect unambiguously the level of attainment of knowledge or relevance of the knowledge gained to life skills and employability, but we have enough indications that quality of education is inferior in many of the backward areas and more importantly in the tribal areas. *These are reflected in such parameters as drop-out rates, non-completion of the school cycle, larger gender gaps, less attraction towards employment oriented vocational and technical courses, and so on.* The sample study indicating the level of attainment against the expected attainment at the primary level has been referred to in our report.

12.2.1 Factors Determining Quality of Education

1. Child centric teaching - learning practices
2. The use of classroom relevant teaching - learning materials
3. Continuous assessment of student understanding
4. Continuous professional development and training of teachers
5. Regular evaluation of teaching learning practices
6. Time devoted to teaching by teachers

7. School meals and health related programmes undertaken
8. Availability of clean drinking water and sanitation facilities, specially for girls, separately.

All these will have a positive impact on quality. While various programmes of the State and Central Government have laid emphasis on many of the above aspects and have tried to create institutions, the impact in the backward areas so far has not been up to expectation.

12.2.2 Specific Recommendations

1. The norms and standards prescribed for key physical infrastructure in RTE and in various other State Government policy documents must be achieved and maintained and zero tolerance policy should be adopted in this regard.
2. Adequate financial provisions must be made.
3. The quality of the infrastructure and their maintenance (particularly reflected in the defunct toilets for girls) varies from district to district and is known to be in very unsatisfactory state. Institutional arrangement for constructing and maintaining buildings and other infrastructure needs to be strengthened, if not changed. Presently, the user does not have an adequate say in this regard. Creating a separate organization under the Education Department, both at the State and Zilla Parishad (or even lower) in consonance with our recommendation regarding strengthening decentralization level may possibly be a solution.
4. The quality and relevance of the content of education needs a serious enhancement and teacher retraining for new and relevant pedagogy needs to be injected.
5. School Accreditation System may be introduced particularly at the secondary level. The system could be compulsory for both, private as well as publicly funded schools.
6. We have separately recommended starting of vocational/livelihood skill education at the school level by leveraging the proposed National Vocational Education Certification.
7. Institutions of repute in various parts of the State should be incentivized to set up their campuses in backward areas and more particularly in the tribal areas. This should cover both secondary level and technical level education (IT/ITES could be leveraged).
8. Public examinations should be introduced at the post Std. IV and post Std. VII levels of the primary education. The examination should be conducted seriously and the results of this examination should be used as one of the measures of quality of education being imparted at the primary level.
9. While the public sector has to play a prominent role for universalizing primary education up to the level of Std. VII, the entry of the private sector at the level of secondary education and in technical and vocational education is important from the point of view of improving quality of education and improving the employability of the students. Strong and effective regulatory mechanism to oversee the working of the private institutions should be put in place.

10. We believe that instead of VIIIth Standard as a norm we should extend it to Xth Standard as a norm. In fulfilling this extended mandate special attention should be paid on a priority basis to the girl child and the vulnerable groups such as tribal persons, minority community and the backward castes. We think that the State will have to provide additional inputs by either directly producing them (setting up organizations/ institutions) or facilitating them through PPP and regulating access prices or then again through *purposive and conditional cash transfers*.
11. Girls' education in Marathwada needs special attention and hence additional financial provisions for hostels and other relevant infrastructure provisions for women. Special funds should be given for safety and security of the women at their stay and arrangement should be made for transportation.

12.2.3 Area Specific Trades: An Illustration

Keeping in view the prospects of employment with the local resource endowment in order to develop the appropriate skills especially of the area specific population the following trades can be contemplated, designed and implemented in liaison with the industry, trade & commerce and agriculture.

1. (a) Modern Techniques of Farming (b) Horticulture (c) Sericulture (d) Poultry farming (e) Maintenance of farm equipments (f) Techniques of water conservation (g) Soil conservation (h) Operating farm machinery and necessary automobiles (i) Tourist guide for sanctuaries and (j) Wireman's course. Awarding certificate should not be the major objective of providing training. After the completion of course, the learner must be confident to be on his own to maintain his own house, a piece of cultivable land or to run an enterprise or gainfully serve an employer.
2. Project oriented training/learning
A large number of projects like State and National Highways, aerodromes at every district place and clusters of textile or aircraft maintenance units are likely to come up. After computing the manpower requirement the details of the training programme must be prepared for the local population having lower level of formal education or no education at all. Courses in (a) Road construction (b) Cleaning and upkeep of premises (c) Security (d) Electrical wiring (e) Carpentry (f) Plumbing (g) Spinning and (h) Weaving must become preferred 'on the job' training with very little emphasis on theory. People must look forward to them as Employment Oriented Courses. Every course can be further sub-divided into (i) Courses for beginners (ii) Introductory course and (iii) Advanced course.
3. Specific Area Courses
These courses need to be designed for Post Graduates, Graduates or Diploma holders, who intend to join a specific industry. For e.g. MAHAGENCO, Koradi is conducting 'Vacation training for engineering students on power engineering familiarization'. A month long certificate course for degree/diploma students can also be organised for getting acquaintance with the industry. These types of courses/ training programmes would be

useful in enhancing the employability of the aspirants of a particular industry. Similarly courses can specially be designed for industries like (a) Iron and Steel- Casting, Rolling and Re-rolling (b) Automobile- Four wheeler, Two wheeler (c) Engineering (d) Plastics and (e) Textiles to name a few.

12.2.4 Incentive Based Scheme for Skill Acquisition (IBSSA)

It is essential that higher educational institutions must have transparency and accountability to the society as they improve quality and reliability. Guided by 'one size doesn't fit all principle', regional specific felt needs have to be addressed and interventions should give a preference to the regions with development deficit.

Considering the growing importance of skilled manpower in our State it would be useful to design a scheme which incentivises acquisition of skills by enhancing employability of the young generation. Towards this we recommend Incentive Based Scheme for Skill Acquisition (IBSSA). Under this scheme vouchers can be given for skill development in two different stages. Those who have passed Std. Xth Examination would be entitled for Rs.10,000/- provided they take admission in government approved institute for trade specified by the concerned authority of the State. Additional financial assistance of Rs. 10,000/- would be provided to them after successful completion of the certificate course. This incentivization will (with the help of supportive institutional reforms such as Community Colleges with relevant courses) will result in enhancing the employability and self employment of the youth. The financial commitment of the exchequer, given the number of students registered for Xth Std. examination in 2011. we assume a pass percentage of nearly 60%. The total estimate of voucher scheme would be of the order of Rs. 2,000 Crores when the scheme is universally and fully functional. This scheme may be introduced in a phase-wise manner. Depending on the resource constraint, the first phase could cover the rural and small towns in backward areas fully and others only in part. The resource requirement will thus be much more manageable in the temporal sense (it already is completely manageable in the overall sense). Also, it needs to be noted that this will be in the nature of non-plan/revenue expenditure.

An appropriate monitoring system should be in place to ensure the success of this scheme. A cell should be established by the Government authorities in liaison with the bankers (this activity could become a component of financial inclusion). While undertaking vocational course if the candidate undertakes monetarily gainful activity and it is duly certified by the authority (Principal/ In-charge of the technical institution) further disbursement of Rs.10,000/- shall be made through the above mentioned cell. After a gestation period of two months the pay back shall be Rs. 1,000/- per month for the subsequent ten months. Once the monitoring authority is convinced about the performance of the beneficiary further disbursements on returnable basis can be worked out. This probably will take care of the regional growth through the self development of the local people.

12.3 Indicators Identified for Allocation Formula

Whilst we have considered various issues related to different levels and aspects of education, in trying to work out the education component in the development deficit index to be used for allocation formula we

have zeroed in on two. This has been done keeping in mind need for plan resources in the context of regional balance as well as pragmatism based on availability of reliable and consistent data from official sources. The two indicators chosen are the SSC students registered (at district level aggregated up-to the regions and ITI intake capacity (again, per district and aggregated to the regions). The method of computing the distances and entering in a weighted manner follows the standard method we have followed and is explained in the Approach Chapter. The basic (underlying data) is presented in Annex 3.4.

12.4 Resource Requirements

We have made several recommendations in the chapter. While our recommendations are largely policy design-reforms driven, yet the State will have to make provision for some additional plan resources. We give Table 12.5 below that estimates the resource requirements. It may appear (and is to some extent true) that there is no direct regional dimension to the resource requirements. However, if one carefully looks at the recommendations in the text of the chapter about setting up of various new institutions (like the Agricultural, Medical Universities, say), it will be noticed that the recommendation do come with a spatial coordinate thereby lending it a regional character. Also, the common universal theme through our report has been informed by the tenet of '*Antyodaya*' which implies that in terms of actual implementation, programs will take a temporal form beginning from the most backward region. It is well known that some of these would be plan resources, but like other social sectors, there will be an eventual (and even upfront) requirement of mainly non-plan or revenue expenditures.

Table 12.5
Resource Requirements

Sr. No.	Purpose	Amount (Rs. In crore)	Remarks
1	2	3	4
1.	School Education (RTE +) and Girls Hostels/Toilets/Kitchens	20-25% in addition to current budget	For Special Mission Mode Exercises aimed at tribal/minorities/women SSA/ Total Sanitation Program/ MGNREGA funds could be used by attaining convergence and strengthening quality of education through teacher training for pedagogic improvement
2.	Setting up of New Universities (5) (Regional/ Medical)& Expansion and modernisation especially for Frontier Science & Technology	1500	UGC as well as RUSA funding could be used for partial funding.
3.	Community Colleges (in every block) + VATI+ Health Institutes	2000	12 th Plan/ RUSA is expected to moot Community College in every district
4.	Voucher Scheme	2000	Demand driven phased program with some comebacks.
5.	Creation of Technical Research and Development Fund (TRDF)	1000	Largely (but not exclusively) for technological sector level research initiatives and local language software (OCR) development.
6	Total (2 to 5)	6500	

Source : Provided by the education sub-group of the committee



CHAPTER 13

Widening the Connectivity

13.0 Introduction

Connectivity in its various *avatars* is a crucial prerequisite for economic development. Its role in triggering and accelerating development has been well documented in the theoretical as well as empirical literature global. More specifically, for India, this fact has been underlined by various studies conducted which report that ever since women have been empowered by creating a reservation for them as Heads/Chairpersons of PRIs, the prioritized felt needs have been recorded as water, education and connectivity. This finding is not surprising given the fact that even such connectivity as implied here helps them to fetch water easily and reach their children to school and take the ill to the PHCs and dispensaries. On our part we believe that such elementary connectivity is a matter of basic entitlement for and hence a fundamental constituent of development which ought to be equalized across board.

There are higher and diverse forms of connectivity too, which comprise connectivity to Markets, Business Places, Higher Educational Institutions and Governmental Seats and in general, places of importance in the wider world. District Roads, State and National Highways fall in this category. Good quality roads increase mobility, reduce transaction costs, provide easy access to markets leading to all round development and progress. Further, when the connectivity is between districts, regions and indeed States with different levels of development, synergies develop and overall economic activity gets an impetus through the accompanying learning and exchange. The large road projects which are inter and intra State (cutting across regions), apart from being identified optically as big ticket projects, assume substantial importance due to their mutually positive feedback impacts and deepened enhancement of trade and commerce.

Roads are only a part of the larger canvass of infrastructure. **Airports, Ports and Port connectivity** and **Rail connectivity** have, historically and globally, played significant roles in pushing the economic growth and development in a variety of ways. Delivering such large impetus through such kind of projects will, in many cases, require an active participation of the Union Government. State government and political leadership will have to endeavor to elicit appropriate support from Union Government. Apart from reducing all-round transaction costs for integrated economic activities, such infrastructures open up markets and attract big private investors nationally and even globally. In a globalized world with equally globalized aspirations, one has to think on a larger scale and wider canvas of global opportunities. Growth acceleration, which is intrinsic to our approach/strategy, requires that there should be no constraint from the markets being small and hence the '*other than usual simple road connectivity*' assumes importance.

The ambience and the backward and forward linkages embedded in the working of modern integrated global economy require such higher forms of connectivity. Perhaps it may be helpful here to

recall the analogy of revolution in telecom sector ushered in India more than three decades ago, which was then sneered at, with a view expressed that it was fanciful and irrelevant in country trying to grapple with the more basic issues of poverty et al. The fallacy of the myopic counter view of sneering skeptics is by now obvious and the good intended and unintended outcomes are for anyone and all to see.

Finally and in the same vein, the importance of broadband connectivity cannot be over emphasized. Whilst the relevant work of software creation in regional language is a tough (though feasible and achievable) task, the enormous impetus that it will give to backward regions and people therein, will be huge. Given the production structure of modern Indian and more importantly Maharashtra's economy such relevant supportive infrastructure would provide most of the value addition (especially in the higher echelons of value chain) in economic activity and more importantly it would indeed be *footloose*. This will help the economic development and accelerate growth and progress in the backward regions. The *positive network externalities* that will accrue will help the backward regions and its people to leap frog to the front in the process of economic growth acceleration and development. Thus, the two track approach towards tackling the question of regional imbalance is reflected in our thinking on connectivity too as explained above.

13.1 Roads

Development of infrastructure is an integral part of economic development. Transport infrastructure in case of PWD or for that matter even of MSRDC, CIDCO or MMRDA includes establishing road network to ensure better connectivity to ports, airports, railways, industrial centers, major cities, towns and villages including hilly, inaccessible, tribal and special areas.

At the time of formation of the State of Maharashtra in 1960, the total road length in the State was 39,242 km and the density of road was 12.75 km. per 100 square km. of area. Improvement in this sector was envisaged through 20 Years' Road Development Plan (1961-81). The objective of this 20-year road plan was to achieve a target of 1,32,298 km. of road length and density of 43 km. per 100 square km. of area. By March 1981, development of 1,00,636 km. road length was completed and a density of 32.7 km. per 100 sq. km. was achieved.

With a view to develop villages and small towns and also with a view to arrest the migration of population to cities and larger towns, another 20-Year Road Development Plan (1981-2001) was prepared. This plan envisaged the development of 2,07,348 km. of road length with an increase in the density of road to 67.4 km. per 100 sq. km. of area, connecting all towns by Major District Roads, all administrative headquarters by State Highways and villages with population of 1000-1500, by Other District Roads. This plan was reviewed in 1997 and the target was increased from 2, 07,348 km. to 2,70,010 km. with road density of 87.7 km. per 100 sq. km. area. The State Government has, so far, developed 2,41,712 km. of road length and has achieved a density of 78.6 km. per 100 sq. km. of area.

Based on the VISION-21 documents of IRC, the State Government has formulated yet another 20-Year Road Development Plan (2001-21) targeting to complete about 3,36,994 km. road network and achieve a road density of 109.5 km. per 100 sq. km. of area. The plan has also taken into consideration construction of Expressways, apart from achieving a density of 109.5 km. per 100 sq. km. of area, for rapid and uninterrupted movement of vehicles. Fifteen roads with a total length of 7035 km. have been identified to be developed in such a way that eastern end of the State gets connected to the western end

and northern end gets connected to southern end and subsequently this network is converted into a network of National Highways for interstate communication and commercialization. These roads will be equipped with all the amenities at every 100 km. distance. This plan also envisages that the industrial centers, pilgrim centers and places of tourist and commercial importance are well connected with State Highways.

Table 13.1 below shows the existing and targeted road lengths for 2001-21;

Table 13.1
Existing and Targeted Road Length (2001-2021)

Sr. No.	Category of Road	Existing Road Length (In kms.)	Targeted Road Length (In kms.)
1	2	3	4
1	National Highway	4376	4509
2	State Highway/Expressway	34103	43601
3	Major District Road	49936	51993
4	Other District Road	46897	61159
5	Village Road	106400	175732
6	Total	241712	336994

Source : Public Works Department, GoM

It is a fact that inadequate infrastructure results in lower efficiency, lower productivity, high transaction cost and insufficient access to the major markets. Moreover, due to lack of proper transport infrastructure, the objective of decentralization of industrial sector on a large scale is not feasible. Lack of adequate decentralization of the industrial sector is also one of the main reasons for growing urbanization and large scale migration to urban areas which in turn create a number of problems for the major cities.

For a decentralized industrial sector, rapid movement of raw materials to the production units and finished goods to the major markets is a prerequisite, and therefore the speedy development of the road infrastructure is a must. Hence there is an urgent need to implement the road development program in the following manner:

1. Existing two-lane National Highways be converted to four-lane.
2. Expressways be constructed on major traffic corridors to facilitate speedy travel.
3. 150 km. Mumbai-Nashik Expressway be constructed at the earliest.
4. Major industrial centers, places of commercial & tourist importance be connected by State Highways.
5. A network of 16 roads (to be converted into National Highways in future for interstate communication and commercialization), comprising 7035 km. has been identified. This network be developed early.
6. District to district headquarters be connected by two-lane roads.

7. Taluka headquarters be connected by single and half-lane roads.
8. Villages with population of 1500 and more be connected by Major District Roads & at least 40% of the MDRs be converted to two-lane.
9. Villages with population of 1000-1500 be connected by Other District Roads.
10. All villages be connected by at least one *All- Weather* road.
11. Ring roads be constructed at district headquarters.
12. By passes be constructed at taluka headquarters.

Public Works Department is responsible for the development of infrastructure of roads such as Major State Highways, State Highways and Major District Roads through State budgetary support, Central Road Fund, loan from NABARD and PPP (Public Private Partnership). In the same way, Other District Roads and Village Roads are developed through funding by District Planning Committees, PMGSY, Additional PMGSY, Tribal Sub Plan, MPLAD and MLA fund.

13.1.1 National Highway (NH), State Highway (SH) & Major District Road (MDR)

The category wise and linear and single lane-wise (3.75 mtr.) length status of National Highway and state level roads is shown in Annex 13.1.

13.1.2 Scheme for funding of State level roads is explained below

1. State budget for the development of Major State Highways, State Highways and Major District Roads.
2. NABARD loan component for development of MDRs and construction of bridges on village roads as well as on SHs and MDRs.
3. CRF (Central Road Fund) from the Government of India for widening and improvement of State Highways and Major District Roads.
4. Tribal Sub Plan for state sector roads in tribal area.
5. Private sector investments through PPP Projects depending upon the feasibility of projects.

13.1.3 Table 13.2 summarizes the possible sources of funding for the state sector roads.

Table 13.2
Source of Funding for All Roads

(Rs. In Crore)

Sr. No.	Category of Road	Total Length (kms.)	Possible Source of Fund (As per 2011-12 DSR)				
			BOT	State Level / CRF	NABARD	Tribal Sub Plan	Total
1	2	3	4	5	6	7	8
1	NH	4509	0	0	0	0	0
2	EW	812	5840	44	0	0	5884
3	MSH	7035	7017	2827	0	0	9844
4	SH	35755	7874	16186	192	0	24251
5	MDR	51994	1	8052	3017	1093	12162
6	ODR*	61159	0	0	261	0	261
7	VR*	175731	0	0	624	0	624
Total**		336994	20731	27108	4093	1093	53025

* Bridges on ODR & VR ** Total figure could be different due to rounding off of figures.

Source : Public Works Department, GoM

Under PPP (BOT), 20% of VGF is by the State and a maximum of 20% of VGF is by the Central Government. The VGF by the Central Government goes directly to the concerned entrepreneur. Hence a maximum of 20% amount of the total requirement under PPP, which works out to Rs. 4146 Crore can be contributed by the Central Government, unless there are any policy changes at the Government of India level. Out of the remaining amount of Rs. 16585 Crore, State will have to bear Rs. 4146 Crore and the balance amount of Rs. 12439 Crore will have to come from the entrepreneurs. The estimated cost for achieving this target of state sector roads would be of the order of Rs. 38262 Crore in 2012-13 (Applying inflation @ 5% p.a.).

13.1.4 Conversion of Ratnagiri-Solapur-Nanded-Yevatmal-Nagpur MSH-6 into Expressway

The above mentioned road was designated as MSH-3 in RDP 1981-2001 and as MSH-6 in RDP 2001-21. Now, this link from Ratnagiri to Solapur (369 km.) has been declared as NH-166 in 2013. The link from Solapur to Tuljapur (40 km.) is already declared as NH-211 and from Tuljapur to Nagpur (495 km.) has been declared as NH-361 in 2013. These links connect the coastal area of Maharashtra to the hinterland right up to Madhya Pradesh border. This road passes through the under developed regions and its development will be very vital for the overall development of Marathwada and Vidharbha regions. These links are yet to be included in the NHDP program and thus cannot be undertaken for four-laning. Keeping in view the present design standards, the total cost of four-lanning the road from Ratnagiri to Nagpur (904 km.) will be about Rs.13500 Crore (at 2012-13 DSR). Since, it is a National Highway, the funding is expected to come from the Centre.

13.1.5 Coastal Highway

Coastal Highway i.e. Major State Highway No.4 is running along the coastal region of the State parallel to NH-17. It starts at Zai in Thane district and after traversing through Raigad and Ratnagiri districts it ends at Redi in Sindhudurg district. The state ports along the coastal highway are Dighi, Jaigad, Dabhol, Ratnagiri, Jaitapur, Vijaydurg, Devgad & Redi. Total length of this coastal highway is 787 kms. It comprises 51 major and minor bridges, out of which 41 are completed, seven are in progress and work of three bridges is yet to be undertaken. To complete this highway to State Highway standards i.e. two-lane (7.00 mtr.) carriageway, the total cost including the cost of land acquisition will be approximately Rs.2000 Crore as per 2012-13 DSR.

13.1.6 Other District Road (ODR) & Village Road (VR)

Status of existing district roads (As on 31-3-2011) category wise as well as linear and single-lane wise (3.75 mtr.) length is shown in the Annex 13.2

13.1.7 Scheme of Funding of District Level Roads

1. District Planning Committee funds for rural infrastructure development.
2. PMGSY financial assistance from Government of India for the creation of rural infrastructure like ODR and VR.
3. Tribal Sub Plan fund for local sector roads in tribal area.
4. MPLAD fund.
5. MLA/MLC fund.

13.1.8 Table 13.3 summarizes the possible sources of funding for the local sector roads.

Table 13.3
Funding for Local Sector Roads

(Rs. in Crore)

Sr. No.	Category	Total Length (km.)	Total Possible Source of Fund (As per 2011-12 DSR)				
			PMGSY*	Additional PMGSY*	ODR	TSP	Total State Govt.
1	2	3	4	5	6	7	8(6+7)
1	ODR	61159	6483	479	5382	559	5942
2	VR	175731	13062	2380	24095	3647	27741
	Total	236890	19545	2859	29477	4206	33683

*PMGSY and Additional PMGSY schemes are 100% Centrally Sponsored Schemes.

Hence the possible source of funding does not take into account the above figures.

Source - Public Works Department, GoM.

Taking inflation into consideration the estimated fund requirement in 2012-13 would be of the order of Rs. 35,367 Crore for achieving the target of local sector road length.

13.1.9 Village Connectivity

The village connectivity of 291 villages, as per 2001 Census, is yet to be achieved. These villages are located in all regions of the State but majority of them are in Gadchiroli, Thane, Raigad, Satara, Nandurbar and Buldhana districts which are tribal, hilly or LWE affected areas. The details of unconnected villages are given in Table 13.4

Table 13.4
Number of Unconnected Villages

Sr. No.	Details of Unconnected Villages (Reasons)	Number of Villages
1	2	3
1	Forest land	73
2	Hilly and remote area	14
3	Private land	27
4	Proposed works under various scheme	22
5	Creek/island	28
6	Naxalite (LWE) affected area	35
7	Submergence area	39
8	Works in progress	53
Total		291

Source - Public Works Department, GoM.

For village connectivity, the physical norms for village road is 3.75 mtr. wide carriageway with 1.5 mtr. side berms on both sides along with gutters on either side. The minimum land width required for this construction is 10 mtr. The crust for the road depends upon the soil condition & rainfall in the area. The average cost per kilometer comes to Rs.75 to 80 lakh. At present the connectivity to these villages is undertaken through XIIIth Finance Commission Program (By PWD), PMGSY and Additional PMGSY (by RDD) and MNP (by RDD).

13.1.10 Roads on PPP Basis

Committee has been informed that by attracting private investment along with some VGF to the tune of Rs. 14478 Crore in 137 projects, about 4685 km. road length will be completed. Out of this, 90 projects for two-laning 1733 km. length of road has already been completed at a cost of Rs. 865 crore. Another 14 projects for four-laning 573 km. length, costing Rs. 1894 Crore has also been completed. There are 12 projects costing Rs. 4345 Crore and covering a length of 799 km. are in progress. Projects numbering 21 for a length of 1580 km. and costing about Rs. 7374 Crore are in the pipeline. Adequate funding by the State Government will be required, at least to meet the viability gap. The issue of non- viability should not be over emphasized.

13.1.11 Connectivity to Ports

The development of Konkan region also depends, to a large extent, on port development. Port development, in turn, depends on connectivity and uninterrupted access to the hinterland.

Therefore, it is necessary to improve port connectivity and bring the port traffic to the National Highway No.17 (Mumbai-Goa) by developing the east-west connectors. The coastal strip is dotted with various ports, the development of which is presently in progress. These ports can be connected to NH-17 by developing small east-west links which are presently not designed to carry heavy port traffic. There are 20 such links totaling 719 km., which need up gradation. The committee has been informed that the Home (Transport) Department has already published a policy for the development of ports in 2010, wherein it is specified that the port developer should construct six-lane/eight-lane cement concrete roads from port boundary to the nearest National Highway. However in the absence of any port developer coming forward, the port connectivity will remain an issue. Hence it will be advisable for the State to take up these connecting roads (at present numbering about 17, because the other 3 namely Dighi, Revas and Niwali-Jaigarh, have already been taken up by the existing developers) so that the development of Konkan and of the hinterland doesn't get delayed unnecessarily. Out of these three ports, road work of Niwali-Jaigarh is expected to start with Central support for VGF and the other two are at initial stages. The State can make a provision for the remaining 17 links totaling 613 kms. The estimated cost in 2012-13 would be around Rs. 9700 Crore.

13.2 Development and Expansion of Railway Networks

Primary road network (comprising village, district, State and the rest of the country), apart from other forms of connectivity are equally, if not more, important for fostering development and growth in a modern (globally integrated) economy. These include rail, ports and airports connectivity not to talk about the broadband connectivity. In this context the lack of such connectivity modes especially in the backward regions of the State needs to be remedied. It is imperative, therefore, that we get on to this work so that the positive network externalities are reaped by the entire State of Maharashtra.

Historically rail-roads were the harbinger and indeed instruments of progress and development. The history of India too witnessed a great deal of construction of rail network during the British Raj. Although the British were concerned more, with their own interests in terms of connecting hinterland with the ports for goods to be shipped away back home, than the development of the country, nevertheless, it is clear that towns developed along the railway corridor and especially around the stations. Railways not only help movement of raw and finished materials, with obvious positive impact on trade and commerce in the local economy, but also help passenger mobility in a quick and eco-efficient manner. Movement of people also, on the one hand opens up a larger space and possibilities and on the other attracts visitors/ tourists which is always good for the economy.

It is with such a view that Maharashtra has a well thought out and realistic program to connect (in inter and intra sense) different regions of the State leading to greater integration of the local economies and people. Of course since this fundamentally requires the initiative of the Central Government albeit with the State's involvement, it will require persuasive efforts on the part of the State to prevail upon the Central Government to give the nod.

Amongst the already sanctioned projects we have the Ahmednagar-Parli-Vaijanath project as well as Wardha-Nanded-Pusad rail connectivity project which will together cost around Rs. 5400 Crore

with the State's contribution to the extent of Rs. 2450 Crore. There are also additional projects costing about Rs. 5,500 Crore, such as Manmad-Indore, Wadsa-Desaiganj-Gadchiroli, Nagpur-Nagbhir, Gadchandur-Adilabad, Pune-Nashik and Karad-Chiplun which are awaiting approval. The State will be required to contribute 50% of this cost. Thus, of the total plan of just below Rs. 11,000 Crore, around 60% are being planned for the backward regions. While the Government of Maharashtra will be doing its utmost to provide resources, given the fact that these are projects that are forward looking and hence do not necessarily have extant/observed demand they may show up a viability gap when viewed through traditional techniques of calculation. And yet, as instruments of development, when viewed through 'public' rather than 'private' lenses, their utility is undisputed and hence VGF facility will have to be sought to render them bankable and amenable to PPP mode.

Going forward, given the environmental concerns, it would be prudent (and almost necessary) that we incrementally (apart from the existing projects on hand) undertake a big investment in improving our Railway network and density. Apparently we have been concentrating only on passenger transport connectivity (especially when it comes to Railways). Consequently it is demand driven and the criterion is largely confined to a healthy rate of return. Now we must look at the Railways as providing freight transport and hence as providing supply of essential infrastructure for supporting economic growth. The connectivity thus will have to be between hinterland and ports (especially keeping in mind, but not confined to exports). Currently we are looking at the road network to do the job. Given the eco-sensitivity and recognizing that rail mode will be least polluting and cost effective when it comes to freight transport, we need to move in this direction in a concerted manner. Recognizing that, this is mainly to be done by Ministry of Railways, Maharashtra will have to make a persuasive argument with the Centre and even be ready to pick up a larger proportion of the tab so as to leap frog and supply such infrastructure component in other areas also where a potential demand exists.

13.3 Development of Ports

Ports are recognized, through historical times, as gateways to the wider world and also (perhaps hence) sites of human habitations. Water which is crucial for life is equally so for development and progress. Water again has been used historically for navigational purposes too. Perhaps in modern times, blessed as we are with a large coast line, we have not exploited this locational advantage to its fullest extent. This has led to the suffering of many and in particular the Konkan region. It is indeed an irony that we have not exploited the full economic potential, that port development would lead to, in various ways and the impact it would have on the local economy as also on the economy of Maharashtra.

Many projects are planned, the most ambitious amongst them being the Rewas project, which is supposed to have an estimated capacity of handling cargo to the tune of 140 MTA by 2020. As mentioned earlier, port development by itself is of limited use unless it is accompanied by hinterland connectivity through road and rail projects. Recognizing this, eight road projects of 250 km. and seven rail projects of 320 kms. are said to be in the pipe line. Some of the other port projects planned are Dhamankhol-Jaigad-Angre in Ratnagiri; Rewas-Aware-Dighi (which is crucial because of the planned Delhi Mumbai Industrial Corridor being planned up to Dighi) in Raigad and Vijaydurg-Redi in Sindhudurg which are in various stages of completion with the one in Ratnagiri and at Dighi already operational. Policies may be suitably modified from time to time to attract more and more private investment in Port sector.

13.4 Airport Development and Air Connectivity

Air travel in India is seen as luxury and not up there with the other crucial/ burning developmental issues such as poverty. This is the same vein of thinking that critiqued the 'telephony revolution' initiated some quarter of a century ago in India. Today the results are for all to see. The changed processes and supply chains associated with the modern and global economy implies that airports/aircrafts are being used incrementally as freight transport vehicles. Also, time being the scarcest of resource the air connectivity is simply essential if big entrepreneurs and capital have to move to different locations. Regionally backward areas simply have to be equipped with easy and quick accessibility which is never better accomplished through than by air. The backward linkages and the impact (even in terms of local reasonably low skilled jobs) on local economy of large airport operations are seen to be huge. Direct trade and commerce apart, the potential for location specific niche tourism boost to the local economy is also tremendous. Committee has been informed that the State has planned to develop (albeit not its exclusive business or right) 22 airports in various parts of the State. The plan is to connect 19 district head quarters. Night landing facilities will also be provided at four international and six domestic airports. Several airports have been taken up for up-gradation and expansion. New Mumbai, Pune, Nagpur and Aurangabad will be developed as international airports with obvious connectivity and opening up gains that would lead to a push (through backward and forward linkages) to the backward regions' economic development. Dovetailing this with the industrial investment plans for the backward regions will help them attain accelerated economic growth which alone will help in attaining regional balance in a sustainable fashion. An estimated cost of about Rs. 1350 Crore (at 2012-13 DSR) will be required, as informed to the committee, for development of all the above airports.

13.5 Broadband Connectivity

Finally we come to the importance of broad band connectivity. Mention of this in the same breath as the discussion related to issues of poverty and deprivation raises many a skeptical eyebrow. But given that we live more and more in a globally integrated world economy, we need to be forward looking. Especially in the context of regional imbalance, it needs to seriously realize that a strategy of catching up in the traditional manner is almost certainly self-defeating (lest someone should think of this as an 'apology' or forget the past injustices kind of argument, let us hasten to emphasize that what we are asking for is not less or more; but something that is more meaningful and likely to deliver the regionally backward areas out of the rut!). The availability of broadband connectivity especially in the backward regions will allow them to leap frog ahead in the context of the production structure of the economy of present Maharashtra. Make no mistake, this is no magic wand, but will need to be supplemented by local skilling/capacity building and investment in software in local languages for specific advantage. But equally, with this done, we have the best chance of attaining our goal of regional balance in a sustainable manner. Government of India has taken up broadband connectivity program in a large way. The State should provide the additional resources to the IT Department on priority so that benefits accrue at the earliest and they help in narrowing down/removing the regional imbalances rapidly. Although no estimates were provided by the IT department, the committee was informed that the required resources are comparatively too small to be mentioned as a recommendation.

13.6 Total Resource Requirement for Connectivity

To sum up, the entire connectivity program will require huge resources to be provided by the State, timely and equitably. The issue of non-viability should not be over emphasized. Table 13.5 below shows the resource requirement for the complete development of connectivity by the end of XIVth Five Year Plan. The State will be required to spend about Rs. 82,179 Crore. But considering that VGF for PPP roads may also have to be provided by the State government, the total resource requirement for connectivity may be approximately Rs. 85,000 Crore at 2012-13 level.

Table 13.5
Resource Requirement for Connectivity

(Rs. In Crore)

Sr. No.	Sector	Item	Resources Required (2012-13)			
			Central	Private	State	Total
1	2	3	4	5	6	7(4+5+6)
1	Roads	State Roads			38262	38262
2		Ratnagiri-Nagpur NH	13500			13500
3		Port Connectivity		9700		9700
4		Coastal Road			2000	2000
5		Local Sector Roads	23524		35367	58891
7		Roads on PPP basis		11719		11719
		Total	37024	21419	75629	134072
8	Railways		5700		5200	10900
9	Airports				1350	1350
	Grand Total		42724	21419	82179	146322

Source - Public Works Department, GoM.



Bibliography

Chapter 6: Governance : Towards Greater Regional Empowerment and Accountability

- Annual Plan 2012-13 Summary Statement – Part 2, Planning Department, Government of Maharashtra (GoM)
- Article 371 (2), Part XXI Temporary, transitional and special provisions. Special provision with respect to the States of Maharashtra and Gujarat. The Constitution of India <http://www.constitution.org/cons/india/p21371.html>
- Background Note to Governor's Directives http://rajbhavan.maharashtra.gov.in/pdf/Background_note_on_directives.pdf
- Commonwealth Parliamentary Association, Maharashtra Branch, Nagpur Session – Myth and Reality, 2012
- Directives by the Governor of Maharashtra under rule 7 of the Development Boards for Vidarbha, Marathwada and the Rest of Maharashtra Order 201, for the region wise distribution of outlays in the Annual Plan of FY 2012-13 http://rajbhavan.maharashtra.gov.in/pdf/Governors_Directives_2012_13.pdf
- Economic Survey of Maharashtra, Government of Maharashtra (GoM)
- Governor's Rules- Office of the Secretary to the Governor of Maharashtra, Raj Bhavan, Mumbai http://rajbhavan.maharashtra.gov.in/pdf/Development_Boards_Rules_1994.pdf
- Maharashtra Vidhan Mandal, 2013
- Palshikar, Suhas. (2012), 'Reimagining Maharashtra-Moving towards creative politics: Overview and suggestions'. Department of Politics & Public Administration, University of Pune. Study submitted to High Level Committee on Balanced Regional Development, Govt. of Maharashtra
- Performance Evaluation of Statutory Development Boards (SDBs) in Maharashtra (2003). Programme Evaluation Organisation, Planning Commission, Government of India
- Publication of Directorate of Economics and Statistics (2008), Government of Maharashtra (GoM)
- Report of the Fact Finding Committee on Regional Imbalance in Maharashtra (1984). Planning Department, Bombay, Government of Maharashtra, (GoM)
- Report of Fact Finding Team on Vidharbha (2006). Regional Disparities and Rural Distress in Maharashtra with particular reference to Vidharbha, Planning Commission, Government of India
- State Annual Plan 2001-02 to 2012-13, Government of Maharashtra (GoM)

- “What does “good governance” mean? United Nations University <http://unu.edu/publications/articles/what-does-good-governance-mean.html> - viewed as on 06.04.2013

Chapter 7: Tribal Areas : Redeeming the Promise

- Bang Abhay, Reddy Hanimi and Deshmukh M.D. (2006)– Hidden Child Mortality in Maharashtra, National Commission Population, Ministry of Health and FW, Govt of India, New Delhi
- CRHP & MAAS (Comprehensive Rural Health Project, Jamkhed and Maharashtra Association of Anthropological Sciences, Pune) (2007), *Tribe-Wise Population Survey* (Volume 1 and 2). Adiwasi Utthan Programme, Pune.
- Government of Maharashtra, 2004 and 2005. *Report of the Child Mortality Evaluation Committee* (Part 1 and 2). Health Department, Mumbai
- Government of Maharashtra, 2012 (a). *Annual Tribal Sub-Plan 2012-2013*. Tribal Development Department, Mumbai. (p.478-80)
- Guha, Ramchandra, 2001(1999). *Savaging the Civilized: Verrier Elwin: His Tribals and India*. Oxford University Press, New Delhi
- NNMB (National Nutritional Monitoring Bureau) (2009) *Technical Report No. 25*. Indian Council of Medical Research, Hyderabad.
- Planning Commission. 2011. *India: Human Development Report 2011 - Towards Social Inclusion*. Oxford University Press. New Delhi.
- SEARCH, (2013)'Tobacco vs Development', *Economic and Political Weekly*, Feb 2,; Vol. XLVIII No. 5; pp 19-23
- UNICEF/IIPS, (2012) Child Nutrition Survey of Maharashtra
- YASHDA (2012) *Maharashtra Human Development Report, 2012: Towards Inclusive Human Development*. Yashwantrao Chavan Academy of Development Administration, Pune 411007 (Unpublished).
- YASHADA, 2012(a). *Block Development Indices of Maharashtra*. Yashwantrao Chavan Academy of Development Administration, Pune 411007 (Unpublished Data).

Chapter 10: Development of Water Resources

- Maharashtra Water & Irrigation Commission, 1999
- Irrigation Status Report (Annual report published by Water Resources Department of GoM), 2001-02 to 2011-12
- Rangnathan Committee Report, 2009
- Chief Engineer (Local Sector) Pune's Annual Report, 2011
- Report on the dynamic ground water resources of Maharashtra, 2008-09 (Published by GSDA), 2010
- White paper published by Water Resources Department, GoM,
- CADWM Circular of MoWR, GoI, F-11-1/2008 CAD dt. 6/11/2008 (2010)
- Study Group report on *MajiMalgujari* Tanks in East Vidarbha, March 2012

Chapter 11: Health: Balancing Through Universalization

- Census India. http://www.censusindia.gov.in/2011census/hlo/District_Tables/HLO_Distt_Table_Maharashtra.html.
- District wise Total & Tribal Population as per 1981, 1991 & 2001 Census Of Maharashtra state. <http://mahatribal.gov.in/pdf/TSP/DISTRICTWISE-TRIBAL%20POPULATION.pdf>.
- **Provisional Population Totals of 2011: Maharashtra.** Chapter 5 - Sex Composition of Population. Government of India, Ministry of Home Affairs, Office of the Registrar General & Census Commissioner.
- http://censusindia.gov.in/2011-prov-results/data_files/Maharashtra/8%20-%20Chapter%205.pdf.
- District Population Projection. Maharashtra. <http://india.unfpa.org/drive/PopulationProjectionsReport.pdf>.
- Survey of Causes of Deaths. Directorate of Health Services, Government of Maharashtra. 2011.
- Sample Registration System, Statistical Report 2010, Government of India, Ministry of Home Affairs, Office of the Registrar General & Census Commissioner, India. <http://www.censusindia.gov.in/2011-Common/srs.html>.
- District Level Household Survey (DLHS-2) on Reproductive and Child Health, India 2002-04. International Institute for Population Sciences, (IIPS), 2006, Mumbai.
- District Level Household and Facility Survey (DLHS-3), 2007-08: India. Maharashtra: Mumbai: International Institute for Population Sciences (IIPS), 2010.
- F. Ram et al. 2012, IIPS, Mumbai.
- Comprehensive Nutrition Survey in Maharashtra. International Institute for Population Sciences, Deonar, Mumbai 400088.
- Sample Registration System Bulletin, Registrar General of India, Govt. of India, New Delhi (Oct. 2012)
- Government Of Maharashtra, A Report On 'Morbidity And Health Care' Based on Data Collected in Central, State And Pooled Samples of 60 th Round of National Sample Survey (January – June, 2004), Vol. I, 2004-05.
- Motor Transport Statistics of Maharashtra 2010 – 2011 <http://mahatranscom.in/pdf/Statistical.Book.10-11.pdf>.
- Maharashtra Medical Council. <http://www.maharashtramedicalcouncil.in/>.
- Maharashtra Nursing Council. <http://www.maharashtranursingcouncil.org/MNC/Default.aspx>.
- Maharashtra Dental Council. <http://msdcmbai.org.in/Home.aspx>.
- Directorate of Economics and Statistics. Planning Department, Government of Maharashtra, India. <http://mahades.maharashtra.gov.in/>.
- World Health Organization. Health Systems Statistics, Health statistics and health information systems. <http://www.who.int/healthinfo/statistics/indhealthworkers/en/>
- High Level Expert Group Report on Universal Health Coverage for India http://uhcforward.org/sites/uhcforward.org/files/India_report.pdf



Annexes

**Nagpur Pact dated 28.09.1953
(Nagpur Agreement)**

1. Now that a high power Commission is being appointed to report on the question of reorganizing and regrouping of the State in India, we, the people residing in the various parts of Marathi Speaking area, have reached the following conclusions as a basis for the formation of a single State comprising all such areas.
2. This State should be formed of the contiguous Marathi Speaking areas of the present Bombay, Madhya Pradesh and the Hyderabad States. There should be no enclaves within the limits and boundaries of this State. It shall be called Maharashtra or Marathi Pradesh and the city of Bombay shall be its capital.
3. The State will comprise of the three units of Maha-Vidarbha, Marathwada and the Rest of the State for the purposes of all types of development and administration.
4. Subject to the requirements of a single Government the allocation of funds for expenditure over the different units will be in proportion to their population but in view of the undeveloped conditions of Marathwada special attention shall be given to promote the all sided development of that area. A report in this behalf shall be placed before the State Assembly every year.
5. The composition of the Government shall reflect the proportion of the population of the units.
6. Fair and adequate facilities in proportion to that population of these units shall be assured for admission to all educational institutions having training facilities in vocational and scientific professions or other specialized training.
7. The High Court of the new State will have its principle seat at Bombay and a second at Nagpur. The Bench at Nagpur will ordinarily function for the Maha-Vidarbha area. While making recommendations of High Court Judges it shall be seen that the Maha-Vidarbha area gets adequate representation in respect of appointments for the services and the bar. This paragraph will also apply to Marathwada area Mutatis Mutandis.
8. In the matter of services under Government or Government-controlled enterprises-of all grades-recruitment will be in proportion to the population of the respective units.
9. We believe in decentralization as an effective means of better associating the people of the different units with the administration.
10. We realize the long association of the people of Maha-Vidarbha with Nagpur as a capital of their State and the various advantages consequently derived by them from it. We are anxious that subject to the efficient conduct of administration of a single State these advantages should be preserved to the extent possible. All steps necessary to implement, this clause will be taken on the advice of experts. The government shall officially shift to Nagpur for a definite period and at least, one session of the State Legislature shall be held every year in Nagpur.
11. The district boundaries shall be adjusted on the basis of latest Census, with village as the unit so as to include all the contiguous Marathi-speaking areas in the New State.

Nagpur

Dated 28.9.53

Sd/-
R. K. Patil
Bhau Saheb Hiray
Yeshwantrao Chavan
Pandharinath Patil

Sd/-
P. K. Deshmukh
Devikanandan
Laxmanrao Bhatkar

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Ramrao Deshmukh
Gopalrao Khedkar
Sheshrao Wankhede
Nana Kunte

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50	Aakrosh	
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126	Shri Sudhakar Doiphode	
127	Auranagabad Samajik Manch	
128	Paryawarn Sanwardhan and Jagruti Mandal	

Amravati Division

1	Forum for Backlog Removal and Development of Vidarbha	
2	Shri Virendra Jagtap	MLA
3	Shri Nilesh Deshmukh Parwekar	MLA
4	Shri Shankar Bade	
5	Shri Vijay Ladole	
6	Shri Murlidhar Nirban	
7	Maharashtra Rajya Kisan Sabha	
8	Shri Avinash V. Shirke	
9	Shri Sajid Baig	
10	Shri Pravin M. Raut	
11	Shri Prahlad Jagtap	
12	Shri Subhash Sharma	
13	Shri Kishor Tiwari	
14	Shri Arun Pobaru	
15	Shri D.V. Jahagirdar	

16	Shri Arvind Nalkande	
17	Shri Prabhakar Vaidya	
18	Shri Vijay Lajurkar	
19	Shri Om Prakash Baccho Kadu	MLA
20	Adv. Yashomati Thakur	MLA
21	Shri Sanjay Rathod	MLA
22	Smt. Renukatal Adinath Gedam	
23	Shri Sandip Vaidya	
24	Shri Kumar K.Kale	
25	Shri B.T.Deshmukh	
26	Adv. Vijay Bhure	
27	Digras Dushkalgrast Shetkari Mandal	
28	Shri Satish Muskande	
29	Yavatmal Chamber of Commerce and Industries	
30	Shri Madhav Sarkunde	
31	Shri Kishor Darda	
32	Shri Dinesh Gandhe	
33	Shri M.N. Khadse	
34	Shri Kiran Paturkar	
35	Smt.Poornima Upadhaya	

Nashik Division

1	Shri Chhagan Bhujbal,	Minister for Public Works (excluding public undertakings) and Tourism, Government of Maharashtra
2	Dr.Vijaykumar Gavit,	Minister for Medical Education and Horticulture, Government of Maharashtra
3	Shri Padmakar Valvi,	Minister for Sports and Youth Welfare, Government of Maharashtra
4	Shri Gulabrao Deokar,	The then Minister of State for Agriculture, Animal Husbandary, Dairy Development, Fisheries, Water Conservation, Employment Guarantee Scheme, Employment and Self-Employment, and Transport, Government of Maharashtra
5	Shri Manikrao Gavit	MP
6	Shri Dilip Gandhi	MP
7	Shri Prataprao Sonawane	MP

Annex 1.2

8	Shri Vijay Aauti	MLA
9	Shri Dada Bhuse	MLA
10	Shri Nitin Bhosale	MLA
11	Shri Shirish Kotwal	MLA
12	Shri A.T.Pawar	MLA
13	Shri Jaikumar Rawal	MLA
14	Shri Anil Kadam	MLA
15	Shri Sahebrao Patil	MLA
16	Shri Rohidas Patil	Ex. Minister, Government of Maharashtra
17	Shri R.P.Valvi	
18	Smt. Sheela Shinde	
19	Smt. Jayshree Pawar	
20	Shri M.S.Gavit	
21	Shri Vikas Deshmukh	
22	Smt.Rajashree Pahilwan	
23	Shri Anil Dhikle	
24	Dr.Suresh Naik	
25	Shri Parshi Vasawe	
26	Shri Shrimant Mane	
27	Shri Chandrakant Patil	
28	Shri Digambar Patil Shirsat	
29	Smt. Shahanabai Bhil	
30	Shri Bharat Khairnar	
31	Smt. Mandakini Bhoye	
32	Ad.Prakash Patil	
33	Shri Kamraj Nikam	
34	Shri Babanrao Kale	
35	Dr.Bharat Valvi	
36	Shri Shashikant Patil	
37	Dr.Kantilal Daria	
38	Shri Rajaram Shete	
39	Prof.Ashok Sonawane	
40	Shri Prakash Patil	
41	Dr. Hedgewar Seva Samiti	
42	Smt.Megha Borse	
43	Dr.Murtadak	
44	Shri Swapnil Ghiya	
45	Prof. Shyam Patil	

46	Shri Chetan Dalvi	
47	Shri Sachin Sonawane	
48	Maharashtra Adivasi Welfare Association Vyaspeeth	
49	Shri Harishchandra Chavan	MP
50	Shri Sameer Bhujbal	MP
51	Shri Bhausahab Wakchawre	MP
52	Shri Sanjay Sawkare	MLA
53	Shri Manikrao Kokate	MLA
54	Shri Sharad Patil	MLA
55	Shri Dhananjay Mahale	MLA
56	Shri Umaji Borse	MLA
57	Smt. Nirmala Gavit	MLA
58	Shri Mohammed Ismail Abdul Khalil	MLA
59	Shri Rajesh Deshmukh	
60	Shri Jaipalsingh Rawal	
61	Shri P.K.Anna Patil	
62	Shri Vishnu Bhangale	
63	Shri Sampatrao Sakale	
64	Smt. Jayshree Patil	
65	Smt. Deepalita Bang	
66	Smt. Pushpa Mahajan	
67	Smt. Mangala Zhope	
68	Shri Kunal Vasawe	
69	Smt. Vatslabai Vasawe	
70	Smt..Sunanda Kadam	
71	Smt. Sunitatai Bankar	
72	Shri Macchindra Ratanji Patil	
73	Shri Dashrath Mahajan	
74	Shri K.D.Salve	
75	Shri H.M.Oswal	
76	Shri Ambadas More	
77	Shri Baban Raghunath Adik	
78	Shri Kiran Patil	
79	Khandesh Samajik Manch	
80	Smt. Pratibha Shinde	
81	Shri Ashish Wani	
82	Dr.Giridhar Patil	

Annex 1.2

83	Shri Jagannath Khapre
84	Dr.Gajanan Dange
85	Shri Suresh Khanapurkar
86	Shri Karbhari Jawle
87	Shri Sriram Shete
88	Dr. Kantilal Tatiya
89	Dr.Vijay Borade
90	Dr.Rajesh Valvi
91	Shri Ranganath Nawle

Konkan Division

1	Shri Bhaskar Jadhav,	The then Minister of State for Urban Development, Forests, Ports, Khar Lands, Parliamentary Affairs, Sports and Youth Welfare, Ex-Servicemen's Welfare and Law and Judiciary, Government of Maharashtra
2	Shri Ashok Jadhav	MLA
3	Shri Vishnu Sawara	MLA
4	Shri Hussain Dalwai	MP
5	Shri Subhash Chavan	MLA
6	Smt. Indavi Tulpule	Member, Rest of Maharashtra Development Board
7	Smt.Bharati Thale	
8	Shri Vijay Joglekar	
9	Dr.Prasad Deodhar	
10	Smt. Indumati Tulpule	
11	Konkan Bhoomi Pratishthan	
12	Shri Kishor Tanna	
13	Shri Murlidhar Joshi	
14	Dr.Anand Tendulkar	
15	Shri Sadashiv Aalwe	
16	Shri Chintaman Wanga	MLA
17	Shri Bharat Gogawale	MLA
18	Smt.Meenakshi Patil	MLA
19	Shri Deepak Kesarkar	MLA
20	Shri D.M.Sukthankar	Retired Chief Secretary, Maharashtra
21	Smt. Nupur Joshi	
22	Shri Ranjit Khanwilkar	
23	Shri Satyawar Jamsandekar	
24	Shri Mestri (Matru Mandir Ashram)	

- 25 Shri Sanjay Yadav
- 26 Shri Nukul Parsekar
- 27 Shri Dattatraya Kulkarni
- 28 Sindhudurg Zilla Rahiwasi Seva Sanghatana
- 29 Prof. Natekar

Pune Division

- 1 Shri Patangrao Kadam, Minister for Forests, Rehabilitation and Relief Works, Earthquake Rehabilitation, Government of Maharashtra
- 2 Shri Ramraje Naik-Nimbalkar, The then Minister for Water Resources (Krishna Valley Irrigation Corporation), Government of Maharashtra, Now Executive Chairman, State Planning Board
- 3 Shri Jayant Patil, Minister for Rural Development, Government of Maharashtra
- 4 Shri Lakshmanrao Dhobale, The then Minister for Water Supply and Sanitation,
- 5 Shri Udayan Raje Bhonsle MP
- 6 Shri Ganapatrao Deshmukh MLA
- 7 Shri Vijay Shrivare MLA
- 8 Shri Ramesh Thorat MLA
- 9 Shri Hanumant Dolas MLA
- 10 Shri Dilip Mane MLA
- 11 Shri Babanrao Shinde MLA
- 12 Shri Vilaskaka Patil MLA
- 13 Shri Shivendra Raje Bhonsle MLA
- 14 Shri Balasaheb Patil MLA
- 15 Shri Ramesh Shendge MLC
- 16 Shri Tatyarao Jadhav
- 17 Shri Dattatraya Bharane President, Zilla Parishad, Pune
- 18 Shri Sayyad Haroon Abdul Gafoor
- 19 Shri Nitin Bhosale
- 20 Shri Babasaheb Patil
- 21 Smt. Kaushalya Mali
- 22 Shri Sambhaji Gawakare
- 23 Shri Sadashiv Nikam
- 24 Smt. Kalpana Jalgire
- 25 Shri N.V. Deshpande

Annex 1.2

26	Khatav Taluka Bharatiya Janata Party	
27	Shri Ujjwal Keskar	
28	Shri Prabhakar Gharge	
29	Smt. Bhagyashree Bhagyawant	
30	Shri Shivajirao Shinde	
31	Shri Balasaheb Khade	
32	Shri Ashok Baile	
33	Shri Gajanan Vibhute	
34	Adv.Prabhakar Gundage	
35	Shri Rajan Joshi	
36	Dr.Avinash Pol	
37	Shri Srikrishna Moghe	
38	Smt.Mathura Sardar	
39	Shri Shivajirao Aadhalrao Patil	MP
40	Shri Bharat Bhalke	MLA
41	Shri Ashok Pawar	MLA
42	Shri Dilip Mohite	MLA
43	Shri Vijaysinh Mohite Patil	Ex. Dy. Chief Minister, Maharashtra
44	Shri Vallabh Benake	MLA
45	Shri Deepak Salunke	
46	Shri Vikramsinh Patankar	Ex. Minister, MLA
47	Shri Shashikant Shinde	MLA, Now Minister for Water Resources (Krishna Valley Irrigation Corporation)
48	Shri Jaykumar Gore	MLA
49	Shri Anil Babar	MLA
50	Shri Dilip Yelgaonkar	
51	Dr.Nishigandha Mali	
52	Smt. Vijaya Jamdar	
53	Smt. Shobha Mirajkar	
54	Shri Sanjay Desai	
55	Shri Bharat Gaikwad	
56	Shri Manikrao Zhende	
57	Shri Balasaheb Khade	
58	Adv.Bhaskarrao Gundage	
59	Shri Jalindar Kale	
60	Shri Pandurang Sarda	
61	Shramik Mukti Sena	
62	Shri Mohan Yadav	

63	Shri Surendra Gundage
64	Shri Bhiku Devale
65	Shri Sahebrao Deshmukh
66	Shri Nitin Bargude Patil
67	Prof. Banda Godse
68	Shri Anil Desai
69	Smt. Chetana Sinha
70	Prof.Sanjay Tikle
71	Shri Budhajirao Mulik
72	Shri Vidyadhar Deshpande

Mumbai

1	Shri Sharad Kale	Retired IAS
2	Shri Pradip Apte	
3	Shri Niranjana Rajadhyaksh	
4	Shri Vikas Chitre	
5	Smt.Neela Khandge	
6	Dr.Yashwant Raravikar	
7	Dr.Prakash Hebalkar	
8	Shri D.M.Sukthankar	Retired Chief Secretary, Maharashtra
9	Dr.Ajit Ranade	
10	Shri Sunil Bhandare	
11	Shri M.K. Datar	
12	Dr. J.F.Patil	
13	Dr.Sandhya Iyyer	
14	Prayas Energy Group (Pune)	

YASHADA, Pune

1	Adv. Madhukar Kimmatkar	Member, Vidarbha Development Board
2	Lokabhimukh Paani Dhoran Sangharsh Manch	
3	Justice Narendra Chapalgaonkar	Retired Justice, Bombay High Court
4	PRAYAS Energy Group	

(Note: Although the committee has taken every care to list the names of all distinguished participants, possibility of an unintended omission of any name cannot be ruled out. We do place on record their valuable contributions made to the committee's thinking and approach)

Annex 1.3

Number of Meetings Held by the Committee

Number of Meetings	Date of the Meeting	Venue of the Meeting
1	2	3
1	22.06.2011	YASHADA, Pune
2	30.07.2011	YASHADA, Pune
3	16.08.2011	YASHADA, Pune
	17.08.2011	
5	14.09.2011	Sahyadri Guest House &
6	15.09.2011	Yashwantrao Chavan Centre, Mumbai
7	07.10.2011	YASHADA, Pune
	08.10.2011	
9	24.11.2011	YASHADA, Pune
	25.11.2011	
11	10.12.2011	Yashwantrao Chavan Centre, Mumbai
12	13.01.2012	YASHADA, Pune
	14.01.2012	
14	10.02.2012	YASHADA, Pune
15	05.05.2012	YASHADA, Pune
16	09.06.2012	YASHADA, Pune
17	28.07.2012	YASHADA, Pune
18	24.08.2012	YASHADA, Pune
19	05.11.2012	YASHADA, Pune
20	19.11.2012	YASHADA, Pune
21	17.12.2012	YASHADA, Pune
22	18.12.2012	YASHADA, Pune
23	17.01.2013	YASHADA, Pune
	08.01.2013	
25	01.02.2013	YASHADA, Pune
	02.02.2013	
27	18.02.2013	YASHADA, Pune
	19.02.2013	
28	04.03.2013	YASHADA, Pune
	05.03.2013	
29	16.03.2013	YASHADA, Pune
30	24.03.2013	YASHADA, Pune
	25.03.2013	
31	15.04.2013	YASHADA, Pune
	16.04.2013	
32	04.05.2013	YASHADA, Pune
	05.05.2013	
33	06.06.2013	YASHADA, Pune
	07.06.2013	
34	20.06.2013	YASHADA, Pune
	21.06.2013	
35	05.07.2013	YASHADA, Pune
	06.07.2013	
36	22.07.2013	YASHADA, Pune
	23.07.2013	
	24.07.2013	
37	04.08.2013	YASHADA, Pune
	05.08.2013	
	06.08.2013	
38	22.08.2013	YASHADA, Pune
	22.08.2013	
39	01.10.2013	
	02.10.2013	YASHADA, Pune
40	08.10.2013	Mumbai

Sub-Groups

1. Water Resources

Shri. Vijay Borade, Convenor

Dr. Madhavrao Chitale
Dr. V. M. Mayande
Dr. Mukund Ghare
Shri. Radhesham Mopalwar
Dr. D. M. More
Shri. S. S. Deokar
Shri. J. U. Mahalle
Dr. B. P. Kale
Prof. T. S. Gayke
Dr. R. B. Bharaswadkar
Prof. Balasaheb Shete
Shri. J. A. Aher
Shri. A. S. Nanaware
Shri. Bapu Adakine

Dr. Vinayak Deshpande
Dr. R. P. Kurulkar
Dr. Sudhir Kumar Goel
Shri. S. A. Nagre
Dr. S. B. Warade
Shri. S. P. Bagade
Shri. Shankarrao Magar
Shri. A. P. Mule
Shri. A. R. Kore
Shri. Mukund Kulkarni
Shri. R. S. Sontakke
Shri. P. M. Katke
Shri. Shashank Deshpande

2. Agriculture

Dr. V. M. Mayande, Convenor

Shri. Vijay Borade
Dr. Mukund Ghare
Dr. S. S. Kadam
Dr. R. B. Deshmukh
Dr. A. Karunakar
Shri. Eknath Dawale
Dr. N. M. Kande
Shri. Dr. S. V. Bharad

Dr. Vinayak Deshpande
Dr. S. B. Warade
Dr. V. B. Mehta
Dr. G. N. Dange
Shri. Umakant Dangat
Dr. S. M. Tatey
Dr. A. S. Tingre
Shri. Vivek Khambalkar

3. Industry and Infrastructure Development

Dr. R. P. Kurulkar, Convenor

Dr. Vinayak Deshpande
Prof. Pradip Apte
Shri. Vijay Borade
Shri. Vilas Kale

Dr. Abhay Pethe
Dr. Chandrahas Deshpande
Shri. Mukund Kulkarni
Shri. Prakash Hebalkar

4. Education

Smt. Kumud Bansal / Dr. Sangita Kamdar, Convenor

Dr. Abhay Pethe
Dr. Sanjay Chahande

Dr. Vinayak Deshpande

5. Governance**Dr. Sanjay Chahande - Convenor**

Shri. K. P. Bakshi/ Shri. Sitaram Kunte
Prof. Vinayak Deshpande

Dr. Abhay Pethe

6. Health**Dr. Sanjay Chahande, Convenor**

Dr. Abhay Bang
Dr. Sangita Kamdar

Dr. R. P. Kurulkar

7. Tribal Area**Dr. Abhay Bang - Convenor**

Dr. B. D. Sharma
Smt. Surekha Dlavi
Shri. Mohan Hirabai Hiralal
Dr. Ashish Satav
Shri. Anandrao Gedam
Dr. Ashok Belkhode
Smt. Poornima Updhyaya

Dr. Milind Bokil
Shri. Waharu Sonawane
Shri. Netaji Rajgadkar
Shri. Vivek Pandit
Shri. Kaluram Dodhade
Shri. Hiranman Varkhede
Director, Tribal Research Institute

Commissioned Studies

- | | |
|--|-------------------------|
| 1. Regional Growth Strategies for the Region Covered by Development Board, Marathwada | Dr. R. P. Kurulkar |
| 2. Regional Growth Strategies for the Region Covered by Development Board, Rest of Maharashtra | Dr. Pradip Apte |
| 3. Regional Growth Strategies for the Region Covered by Development Board, Vidarbha | Prof. Vinayak Deshpande |
| 4. A Perspective on Political Dynamics on Maharashtra | Prof. Suhas Palashikar |
| 5. States and Prospect of Investment and Employment in Maharashtra: A Disaggregated Look | Dr. Chandras Deshpande |
| 6. New Agricultural Process: States and Prospects | Dr. V. M. Mayande |
| 7. Lessons to be Learnt from Earlier Policy Attempts and Literature | Prof. Mala Lalvani |
| 8. Social Backwardness of Marathwada Region | Prof. Swati Shirwadkar |
| 9. Strategy for Development of Social Sectors as a Means for Human Centric Regional Development in Maharashtra | Dr. Sangita Kamdar |
| 10. Regional Health Sector: Perspective Study | Dr. Prakash Doke |



Annex 3.1

**District wise Population of Maharashtra as per 2011 and 2001 Census: *Maharashtra
Excluding Mumbai and Mumbai Suburban Districts**

Sr. No.	Districts	2001	2011	CAGR
1	2	3	4	5
1	Thane	8128833	11060148	3.13
2	Raigad	2205972	2634200	1.79
3	Ratnagiri	1696482	1615069	-0.49
4	Sindhudurg	861672	849651	-0.14
5	Nashik	4987923	6107187	2.05
6	Dhule	1708993	2050862	1.84
7	Nandurbar	1309135	1648295	2.33
8	Jalgaon	3679936	4229917	1.40
9	Ahmednagar	4088077	4543159	1.06
10	Pune	7224224	9429408	2.70
11	Satara	2796906	3003741	0.72
12	Sangli	2581835	2822143	0.89
13	Solapur	3855383	4317756	1.14
14	Kolhapur	3515413	3876001	0.98
	RoM	48642785	58187537	1.81
15	Aurangabad	2920548	3701282	2.40
16	Jalna	1612357	1959046	1.97
17	Parbhani	1491109	1836086	2.10
18	Hingoli	986717	1177345	1.78
19	Beed	2159841	2585049	1.81
20	Nanded	2868158	3361292	1.60
21	Osmanabad	1472256	1657576	1.19
22	Latur	2078237	2454196	1.68
	Marathwada	15589223	18731872	1.85
23	Buldhana	2226328	2586258	1.51
24	Akola	1629305	1813906	1.08
25	Washim	1019725	1197160	1.62
26	Amravati	2606063	2888445	1.03
27	Yavatmal	2460482	2772348	1.20
28	Wardha	1230640	1300774	0.56
29	Nagpur	4051444	4653570	1.40
30	Bhandara	1135835	1200334	0.55
31	Gondia	1200151	1322507	0.98
32	Chandrapur	2077909	2204307	0.59
33	Gadchiroli	969960	1072942	1.01
	Vidarbha	20607842	23012551	1.11
	Maharashtra*	84839850	99931960	1.65

Source: Census 2011, 2001

District wise Road Density (Kilometer Per 100 sq. km.)				
Sr. No.	District	Road Density (2010-11)	Road Density (2009-10)	Average Road Density
1	2	3	4	5
1	Thane	75	72	74
2	Raigad	75	75	75
3	Ratnagiri	89	89	89
4	Sindhudurg	119	119	119
5	Nashik	91	91	91
6	Dhule	76	76	76
7	Nandurbar	78	78	78
8	Jalgaon	86	86	86
9	Ahmednagar	76	76	76
10	Pune	90	90	90
11	Satara	96	96	96
12	Sangli	105	105	105
13	Solapur	90	90	90
14	Kolhapur	96	93	95
	Rest of Maharashtra	88	87	88
15	Aurangabad	97	97	97
16	Jalna	61	61	61
17	Parbhani	75	72	73
18	Hingoli	66	64	65
19	Beed	88	88	88
20	Nanded	97	97	97
21	Osmanabad	77	77	77
22	Latur	80	80	80
	Marathwada	82	82	82
23	Buldhana	49	49	49
24	Akola	50	50	50
25	Washim	65	65	65
26	Amravati	55	55	55
27	Yavatmal	54	54	54
28	Wardha	64	64	64
29	Nagpur	80	78	79
30	Bhandara	113	105	109
31	Gondia	106	98	102
32	Chandrapur	66	66	66
33	Gadchiroli	46	46	46
	Vidarbha	63	62	62
	Average of Top 3 Districts			111

Region wise Road Density (Kilometer Per 100 sq. km.)				
Sr. No.	Region	Road Density	Distance From Average of Top 3 Districts	Proportions/Regional Share of the total Distance
1	2	3	4	5
1	Vidarbha	62	49	0.48
2	Marathwada	82	29	0.28
3	Rest of Maharashtra	88	23	0.23
4	Average of Top 3 Districts	111	101	1.00

Source: Public Works Department, GoM

Annex 3.3

District wise Rail Density (Kilometer Per 100 sq. km.)				
Sr. No.	District	Rail Density (2010-11)	Rail Density (2009-10)	Average Rail Density
1	2	3	4	5
1	Thane	3.28	3.28	3.28
2	Raigad	4.74	4.74	4.74
3	Ratnagiri	2.41	2.41	2.41
4	Sindhudurg	2.06	2.06	2.06
5	Nashik	1.68	1.68	1.68
6	Dhule	0.74	0.74	0.74
7	Nandurbar	1.26	1.26	1.26
8	Jalgaon	3.49	3.49	3.49
9	Ahmednagar	1.25	1.25	1.25
10	Pune	1.97	1.97	1.97
11	Satara	1.27	1.27	1.27
12	Sangli	1.84	1.84	1.84
13	Solapur	2.20	2.20	2.20
14	Kolhapur	0.44	0.44	0.44
	Rest of Maharashtra	2.02	2.02	2.02
15	Aurangabad	1.06	1.06	1.06
16	Jalna	1.14	1.14	1.14
17	Parbhani	4.22	4.22	4.22
18	Hingoli	0.00	0.00	0.00
19	Beed	0.44	0.44	0.44
20	Nanded	2.14	2.14	2.14
21	Osmanabad	0.79	0.79	0.79
22	Latur	2.19	2.19	2.19
	Marathwada	1.46	1.46	1.46
23	Buldhana	0.88	0.88	0.88
24	Akola	5.51	5.51	5.51
25	Washim	0.00	0.00	0.00
26	Amravati	1.86	1.86	1.86
27	Yavatmal	1.19	1.19	1.19
28	Wardha	2.18	2.18	2.18
29	Nagpur	4.00	3.91	3.95
30	Bhandara	1.83	1.83	1.83
31	Gondia	3.93	3.93	3.93
32	Chandrapur	2.96	2.96	2.96
33	Gadchiroli	0.13	0.13	0.13
	Vidarbha	2.01	2.00	2.00
	Average of Top 3 Districts			4.82

Region wise Rail Density (Kilometer Per 100 sq. km.)				
Sr. No.	Region	Rail Density	Distance From Average of Top 3 Districts	Proportions/Regional Share of the total Distance
1	2	3	4	5
1	Vidarbha	2.00	2.82	0.31
2	Marathwada	1.46	3.36	0.37
3	Rest of Maharashtra	2.02	2.80	0.31
4	Average of Top 3 Districts	4.82	8.98	1.00

Source: Central Railway, South East Central Railway, South Central Railway, Konkan Railway & Western Railway

District wise SSC Students Registered and ITI Intake Capacity

Sr. No.	District	(2010-11)		(2011-12)		Average	
		SSC Students Registered	ITI Intake Capacity	SSC Students Registered	ITI Intake Capacity	SSC Students Registered	ITI Intake Capacity
1	2	3	4	5	6	7	8
1	Thane	122972	5700	144094	7832	133533	6766
2	Raigad	35033	3140	40302	4161	37668	3651
3	Ratnagiri	26119	1726	27757	2984	26938	2355
4	Sindhudurg	13321	908	14319	2252	13820	1580
5	Nashik	77267	5184	85065	8641	81166	6913
6	Dhule	25963	2027	27804	2596	26884	2312
7	Nandurbar	17773	1721	18419	2368	18096	2045
8	Jalgaon	54623	5078	58413	8864	56518	6971
9	Ahmednagar	64573	6080	68643	6928	66608	6504
10	Pune	110193	6902	125676	13893	117935	10398
11	Satara	43312	3832	48873	4508	46093	4170
12	Sangli	39369	3268	44770	4372	42070	3820
13	Solapur	60053	4168	66351	5856	63202	5012
14	Kolhapur	56948	5292	63183	6536	60066	5914
Rest of Maharashtra		747519	55026	833669	81791	790594	68409
15	Aurangabad	53198	2638	56575	3117	54887	2878
16	Jalna	22799	1078	24457	2348	23628	1713
17	Parbhani	20914	1461	24354	2364	22634	1913
18	Hingoli	12426	540	15193	1104	13810	822
19	Beed	35623	2246	38544	3308	37084	2777
20	Nanded	35345	3344	43432	5156	39389	4250
21	Osmanabad	21784	1906	26122	2804	23953	2355
22	Latur	36968	2178	41583	3292	39276	2735
Marathwada		239057	15391	270260	23493	254659	19442
23	Buldhana	35375	2303	37747	3564	36561	2934
24	Akola	25304	1702	27550	2836	26427	2269
25	Washim	16351	704	17341	1184	16846	944
26	Amravati	41387	3884	45020	5673	43204	4779
27	Yavatmal	34516	3580	37366	4208	35941	3894
28	Wardha	18740	2372	21807	2528	20274	2450
29	Nagpur	65475	6320	74823	9685	70149	8003
30	Bhandhara	20715	2076	22769	2564	21742	2320
31	Gondia	22758	1626	24929	2244	23844	1935
32	Chandrapur	50503	3978	36879	5608	43691	4793
33	Gadchiroli	15292	2872	16367	2932	15830	2902
Vidarbha		346416	31417	362598	43026	354507	37222
Maharashtra		1332992	101834	1466527	148310	1399760	125072
Average of Top 3 Districts						110878	8457

District wise SSC Students Registered and ITI Intake Capacity

Sr. No.	Region	Region wise SSC Students Registered			Region wise ITI Intake Capacity		
		Average SSC Students Registered	Distance from Average of Top 3 Districts	Proportions/ Share of the total Distance	Average ITI Intake Capacity	Distance from Average of Top 3 Districts	Proportions/ Share of the total Distance
1	2	3	4	5	6	7	8
1	Vidarbha	32228	78650	0.37	3384	5073	0.35
2	Marathwada	31832	79046	0.37	2430	6027	0.41
3	Rest of Maharashtra	56471	54407	0.26	4886	3571	0.24
4	Average of Top 3 Districts	110878	212102	1.00	8457	14671	1.00

Source: MSBSHSE, Pune

Source: Directorate of Vocational Education

Annex 3.5

District wise Agriculture & Allied Activities Credit Per Ha. (2011-12)

Sr. No.	District	Agriculture & Allied Activities Credit (Rs. Lakh)	Cultivable Area ('00' Ha.)	Agriculture & Allied Activities Credit Per Ha. (Rs.)
1	2	3	4	5
1	Thane	24974	3321	7520
2	Raigad	19628	3095	6342
3	Ratnagiri	33096	5492	6026
4	Sindhudurg	17044	3486	4889
5	Nashik	249565	10153	24580
6	Dhule	36631	4539	8070
7	Nandurbar	28719	3063	9376
8	Jalgaon	142121	8727	16285
9	Ahmednagar	112082	13536	8280
10	Pune	180227	10388	17350
11	Satara	133315	6816	19559
12	Sangli	185846	7167	25931
13	Solapur	53812	13265	4057
14	Kolhapur	240895	5062	47589
Rest of Maharashtra		1457955	98110	14860
15	Aurangabad	80569	8195	9831
16	Jalna	61444	7153	8590
17	Parbhani	51774	5748	9007
18	Hingoli	26837	4001	6708
19	Beed	54933	9426	5828
20	Nanded	69800	8418	8292
21	Osmanabad	50907	6983	7290
22	Latur	56931	6509	8747
Marathwada		453195	56433	8031
23	Buldhana	80475	7396	10881
24	Akola	89856	4536	19810
25	Washim	37143	4101	9057
26	Amravati	54451	8144	6686
27	Yavatmal	68276	9439	7233
28	Wardha	31102	4732	6573
29	Nagpur	57157	6365	8980
30	Bhandara	30347	2045	14840
31	Gondia	13754	2168	6344
32	Chandrapur	40210	5302	7584
33	Gadchiroli	8748	2529	3459
Vidarbha		511519	56757	9012
Maharashtra		2422669	211300	11466
Average of Top 3 Districts				32700

Region wise Agriculture & Allied Activities Credit Per Ha. (2011-12)

Sr. No.	Region	Agriculture & Allied Activities Credit Per ha. (Rs.)	Distance from Average of Top 3 Districts	Proportions/Regional Share of the total Distance
1	2	3	4	5
1	Vidarbha	9012	23688	0.36
2	Marathwada	8031	24669	0.37
3	Rest of Maharashtra	14860	17840	0.27
4	Average of Top 3 Districts	32700	66197	1.00

Source: SLBC, Maharashtra

District wise Per Capita Consumption of Electricity (kwh)				
Sr. No.	District	Per Capita Consumption of Electricity		
		2009-10	2010-11	Average
1	2	3	4	5
1	Thane	1300	1252	1276
2	Raigad	1508	1409	1459
3	Ratnagiri	381	472	427
4	Sindhudurg	188	219	203
5	Nashik	591	644	618
6	Dhule	337	338	338
7	Nandurbar	182	181	181
8	Jalgaon	383	420	401
9	Ahmednagar	337	467	402
10	Pune	834	884	859
11	Satara	879	1071	975
12	Sangli	397	462	429
13	Solapur	369	423	396
14	Kolhapur	680	770	725
	Rest of Maharashtra	799	876	837
15	Aurangabad	600	623	611
16	Jalna	572	585	578
17	Parbhani	167	186	177
18	Hingoli	154	180	167
19	Beed	177	195	186
20	Nanded	165	189	177
21	Osmanabad	197	217	207
22	Latur	245	254	250
	Marathwada	304	327	315
23	Buldhana	250	279	265
24	Akola	255	309	282
25	Washim	176	196	186
26	Amravati	264	301	283
27	Yavatmal	210	233	222
28	Wardha	738	894	816
29	Nagpur	708	787	748
30	Bhandara	425	455	440
31	Gondia	215	237	226
32	Chandrapur	566	601	583
33	Gadchiroli	231	248	239
	Vidarbha	405	439	422
	Average of Top 3 Districts			1237

Region wise Per Capita Consumption of Electricity (kwh)				
Sr. No.	Region	Per Capita Consumption of Electricity	Distance from Average of Top 3 Districts	Proportions/Regional Share of the total Distance
1	2	3	4	5
1	Vidarbha	422	815	0.38
2	Marathwada	315	921	0.43
3	Rest of Maharashtra	837	400	0.19
4	Average of Top 3 Districts	1237	2136	1.00

Source: MAHADISCOM LTD.

Annex 3.7

District wise Comprehensive Health Score (2011-12)						
Sr. No.	District	IMR*	Tb@	Malnutrition#	TFR\$	Health Score
1	2	3	4	5	6	7
1	Thane	70.1	14.2	29.6	66.4	180.3
2	Raigad	70.0	27.7	92.4	83.0	273.1
3	Ratnagiri	100.0	100.0	40.6	99.3	339.9
4	Sindhudurg	74.2	26.2	32.6	100.0	233.0
5	Nashik	62.4	33.3	27.0	66.4	189.1
6	Dhule	56.0	19.2	34.0	70.2	179.4
7	Nandurbar	46.6	16.2	13.6	53.5	129.9
8	Jalgaon	47.7	46.2	47.5	82.0	223.4
9	Ahmednagar	68.1	25.1	61.2	70.2	224.6
10	Pune	86.6	19.8	58.0	72.6	237.0
11	Satara	90.1	20.7	52.8	78.5	242.1
12	Sangli	82.1	44.8	100.0	68.2	295.1
13	Solapur	79.1	60.6	46.8	68.2	254.7
14	Kolhapur	92.9	45.3	45.0	83.0	266.2
Rest of Maharashtra						233.4
15	Aurangabad	60.3	23.2	43.1	64.0	190.6
16	Jalna	55.9	23.0	51.9	59.1	189.9
17	Parbhani	52.2	14.6	50.6	66.4	183.8
18	Hingoli	53.7	26.1	40.4	59.3	179.5
19	Beed	63.6	11.9	56.2	62.4	194.1
20	Nanded	60.2	16.7	61.3	61.9	200.1
21	Osmanabad	56.1	21.2	48.8	69.9	196.0
22	Latur	55.5	23.1	76.0	61.9	216.5
Marathwada						193.8
23	Buldhana	58.3	12.0	32.5	49.7	152.5
24	Akola	69.3	18.1	47.2	67.6	202.2
25	Washim	61.5	12.4	41.9	67.9	183.7
26	Amravati	43.5	10.0	24.4	82.0	159.9
27	Yavatmal	50.4	35.5	43.2	84.4	213.5
28	Wardha	51.6	16.7	39.6	73.7	181.6
29	Nagpur	60.4	16.3	39.2	84.9	200.8
30	Bhandara	49.6	15.5	53.4	82.0	200.5
31	Gondia	44.8	13.8	41.4	65.2	165.2
32	Chandrapur	36.7	11.2	36.8	94.2	178.9
33	Gadchiroli	42.5	8.4	19.2	81.1	151.2
Vidarbha						180.9
Maharashtra						206.3
Average of Top 3 Districts						302.7

Region wise Comprehensive Health Score (2011-12)				
Sr. No.	Region	Health Score	Distance from Average of Top 3 Districts	Proportions/Regional Share of the total Distance
1	2	3	4	5
1	Vidarbha	180.9	121.8	0.41
2	Marathwada	193.8	108.9	0.36
3	Rest of Maharashtra	233.4	69.3	0.23
4	Average of Top 3 Districts	302.7	300.0	1.00

Source: * Derived from DLHS-3 @ DLHS-2 \$ Survey of Causes of Death (Rural)-2011, Public Health Deptt.
 # Monthly Progress Report March 2012, Rajmata Jijau Mother-Child Health and Nutrition Mission

District wise Per Capita Income Excluding Mumbai (2008-09 to 2011-12)

(At Current Prices)

Sr. No.	District	Average NDDP (Rs. Lakh)	Average Population	Per Capita Income (Rs.)
1	2	3	4	5
1	Thane	11350294	10001796	113483
2	Raigad	2377836	2500793	95083
3	Ratnagiri	1146889	1794383	63916
4	Sindhudurg	616766	922620	66849
5	Nashik	4168888	5777111	72162
6	Dhule	1012573	1941480	52155
7	Nandurbar	531422	1493314	35587
8	Jalgaon	2596055	4148689	62575
9	Ahmednagar	2677693	4487092	59675
10	Pune	9735544	8673320	112247
11	Satara	1942096	3062263	63420
12	Sangli	1864507	2862016	65147
13	Solapur	2576569	4325038	59573
14	Kolhapur	3101265	3931262	78887
Rest of Maharashtra		45698398	55921177	81719
15	Aurangabad	2532252	3386788	74769
16	Jalna	833500	1826076	45644
17	Parbhani	811705	1746934	46465
18	Hingoli	407231	1108224	36746
19	Beed	1072338	2433882	44059
20	Nanded	1346934	3239324	41581
21	Osmanabad	719821	1640195	43886
22	Latur	1079263	2347720	45971
Marathwada		8803044	17729143	49653
23	Buldhana	1050013	2501550	41974
24	Akola	958828	1840427	52098
25	Washim	498055	1142644	43588
26	Amravati	1548800	2928252	52892
27	Yavatmal	1248342	2728327	45755
28	Wardha	768565	1360021	56511
29	Nagpur	4093135	4744387	86273
30	Bhandara	628244	1236629	50803
31	Gondia	582806	1315534	44302
32	Chandrapur	1436450	2297920	62511
33	Gadchiroli	402957	1058553	38067
Vidarbha		13216194	23154242	57079
Maharashtra		67717636	96804561	69953
Average of Top 3 Districts				106938

Region wise Per Capita Income Excluding Mumbai (2008-09 to 2011-12)

Sr. No.	Region	Per Capita Income (Rs.)	Distance From Average of Top 3 Districts	Proportions/Regional Share of the total Distance
1	2	3	4	5
1	Vidarbha	57079	49859	0.38
2	Marathwada	49653	57285	0.43
3	Rest of Maharashtra	81719	25218	0.19
4	Average of Top 3 Districts	106938	132362	1.00

Source: Directorate of Economics & Statistics, GoM

Annex 3.9

District wise Population
(Census 2011)*

Sr. No.	District	Population
1	2	3
1	Thane	11060148
2	Raigad	2634200
3	Ratnagiri	1615069
4	Sindhudurg	849651
5	Nashik	6107187
6	Dhule	2050862
7	Nandurbar	1648295
8	Jalgaon	4229917
9	Ahmednagar	4543159
10	Pune	9429408
11	Satara	3003741
12	Sangli	2822143
13	Solapur	4317756
14	Kolhapur	3876001
Rest of Maharashtra		58187537
15	Aurangabad	3701282
16	Jalna	1959046
17	Parbhani	1836086
18	Hingoli	1177345
19	Beed	2585049
20	Nanded	3361292
21	Osmanabad	1657576
22	Latur	2454196
Marathwada		18731872
23	Buldhana	2586258
24	Akola	1813906
25	Washim	1197160
26	Amravati	2888445
27	Yavatmal	2772348
28	Wardha	1300774
29	Nagpur	4653570
30	Bhandhara	1200334
31	Gondia	1322507
32	Chandrapur	2204307
33	Gadchiroli	1072942
Vidarbha		23012551
Maharashtra		99931960

Region wise Population (Census 2011)

Region	Population	Proportions /Regional Share of the total Distance
1	2	3
Vidarbha	23012551	0.23
Marathwada	18731872	0.19
Rest of Maharashtra	58187537	0.58
Total	99931960	1.00

Source: Registrar General of India

* Population Figures and Proportions are Excluding Mumbai

District wise Geographical Area**

Sr. No.	District	Area (Sq. km.)
1	2	3
1	Thane	9558
2	Raigad	7152
3	Ratnagiri	8208
4	Sindhudurg	5207
5	Nashik	15530
6	Dhule	7195
7	Nandurbar	5955
8	Jalgaon	11765
9	Ahmednagar	17048
10	Pune	15643
11	Satara	10480
12	Sangli	8572
13	Solapur	14895
14	Kolhapur	7685
Rest of Maharashtra		144893
15	Aurangabad	10107
16	Jalna	7718
17	Parbhani	6214
18	Hingoli	4827
19	Beed	10693
20	Nanded	10528
21	Osmanabad	7569
22	Latur	7157
Marathwada		64813
23	Buldhana	9661
24	Akola	5676
25	Washim	4898
26	Amravati	12210
27	Yavatmal	13582
28	Wardha	6309
29	Nagpur	9892
30	Bhandhara	4087
31	Gondia	5234
32	Chandrapur	11443
33	Gadchiroli	14412
Vidarbha		97404
Maharashtra		307110

Region wise Geographical Area

Region	Area (Sq. km.)	Proportions/Regional Share of the total Distance
1	2	3
Vidarbha	97404	0.32
Marathwada	64813	0.21
Rest of Maharashtra	144893	0.47
Total	307110	1.00

Source: Directorate of Economics & Statistics, GoM

** Area Figures and Proportions are Excluding Mumbai

CAGR in Manufacturing Income Across Regions 2001-2010 (2004-05 prices)

<i>(In percent)</i>		
Sr. No.	District	CAGR
1	2	3
1	Thane	8.9
2	Raigad	9.6
3	Ratnagiri	11.4
4	Sindhudurg	17.1
5	Nashik	10.9
6	Dhule	5.1
7	Nandurbar	0.0
8	Jalgaon	13.8
9	Ahmednagar	12.9
10	Pune	11.6
11	Satara	5.2
12	Sangli	10.9
13	Solapur	4.3
14	Kolhapur	7.7
Rest of Maharashtra Minus Nandurbar		10.1
15	Aurangabad	9.6
16	Jalna	-4.2
17	Parbhani	15.2
18	Hingoli	0.0
19	Beed	4.2
20	Nanded	4.2
21	Osmanabad	7.2
22	Latur	9.3
Marathwada Minus Hingoli		8.2
23	Buldhana	11.6
24	Akola	5.5
25	Washim	17.7
26	Amravati	17.6
27	Yavatmal	6.0
28	Wardha	7.2
29	Nagpur	8.6
30	Bhandara	6.0
31	Gondia	-0.2
32	Chandrapur	13.6
33	Gadchiroli	8.4
Vidarbha		9.1
Maharashtra Minus Mumbai, Nandurbar, Hingoli		9.8

Source: Directorate of Economics & Statistics, GoM

Annex 3.11

District wise HDI

Region	District	HDI 2001	HDI 2012
1	2	3	4
Marathwada	Aurangabad	0.66	0.74
Marathwada	Beed	0.62	0.70
Marathwada	Hingoli	0.57	0.66
Marathwada	Jalna	0.57	0.68
Marathwada	Latur	0.61	0.68
Marathwada	Nanded	0.57	0.67
Marathwada	Osmanabad	0.60	0.66
Marathwada	Parbhani	0.59	0.70
RoM	Ahmednagar	0.64	0.72
RoM	Dhule	0.60	0.69
RoM	Jalgaon	0.64	0.73
RoM	Kolhapur	0.69	0.77
RoM	Mumbai	0.74	0.85
RoM	Nandurbar	0.53	0.63
RoM	Nashik	0.67	0.76
RoM	Pune	0.74	0.81
RoM	Raigad	0.74	0.76
RoM	Ratnagiri	0.64	0.73
RoM	Sangli	0.68	0.74
RoM	Satara	0.67	0.74
RoM	Sindhudurg	0.68	0.74
RoM	Solapur	0.64	0.73
RoM	Thane	0.73	0.82
Vidarbha	Akola	0.65	0.73
Vidarbha	Amravati	0.65	0.71
Vidarbha	Bhandara	0.64	0.72
Vidarbha	Buldana	0.59	0.70
Vidarbha	Chandrapur	0.65	0.72
Vidarbha	Gadchiroli	0.55	0.62
Vidarbha	Gondia	0.63	0.71
Vidarbha	Nagpur	0.71	0.78
Vidarbha	Wardha	0.65	0.72
Vidarbha	Washim	0.58	0.66
Vidarbha	Yavatmal	0.61	0.71
Maharashtra		0.68	0.76

Source: Maharashtra Human Development Report 2001 and 2012 (Under Publication)



(Rs. in Crore)

Year	A-Receipts					Capital Receipts			B-Expenditure			Interest Payment to Rev. Receipt (In %)
	Revenue Receipts			Total Revenue Receipts (2+3+4+5)	Gross Outstanding Borrowings	Net Borrowings	Total Receipts (6+8)	Non-Plan	Plan	C-GSDP (9-10)**		
	State's Own Revenue	Share in Central Taxes*	Non-Tax Revenue									
1	2	3	4	5	6	7	8	9	10	11	12	13
Actual												
2011-12	87648	13304	8168	12167	121286	225976	22878	144164	104763	37507	1199548	14.43
Provisional												
2012-13	100582	15191	11069	17778	144620	246447	20471	165091	120105	44942	1372648	13.28
Estimated												
2013-14	107285	18086	11993	18621	155985	270551	24103	180088	128402	52529	1537366	13.53
Projected												
2014-15	126144	21523	9574	21503	178745	305604	35053	213798	152208	61590	1746310	13.85
2015-16	142422	25266	10095	25998	203781	346360	40755	244537	172390	72146	1979198	13.77
2016-17	160800	29661	10645	31432	232538	392550	46191	278728	195249	83479	2243143	13.67
XIIth Plan	429367	76450	30314	78932	615064	1044514	121999	737063	519847	217215	5968651	13.76
2017-18	181550	34819	11224	38003	265595	444901	52350	317946	221139	96807	2542289	13.57
2018-19	204977	40875	11834	45947	303633	504233	59332	362965	250462	112503	2881329	13.45
2019-00	231427	47984	12478	55552	347441	571477	67244	414685	283674	131011	3265583	13.32
2000-21	261291	56329	13157	67164	397941	647689	76212	474153	321289	152864	3701081	13.18
2021-22	295008	66126	13872	81204	456210	734065	86376	542586	363892	178694	4194657	13.03
XIIIth Plan	1174253	246134	62565	287869	1770821	2902364	341515	2112335	1440457	671879	16584938	13.28
2022-23	333076	77627	14627	98179	523508	831960	97895	621403	412144	209259	4754056	12.87
2023-24	376056	91128	15423	118702	601308	942910	110950	712258	466794	245464	5388057	12.70
2024-25	424582	106977	16262	143516	691336	1068656	125746	817082	528691	288391	6106609	12.52
2025-26	479370	125582	17146	173516	795614	1211173	142516	938131	598796	339335	6920986	12.33
2026-27	541228	147423	18079	209788	916518	1372694	161522	1078040	678196	399844	7843969	12.13
XIVth Plan	2154311	548736	81538	743701	3528285	5427393	638630	4166915	2684621	1482294	31013677	12.46
Total	3757930	871320	174417	1110502	5914169	9374271	1102143	7016313	4644925	2371388	53567265	12.84

Note 1: These projections are made by the Committee based on historical data from 2002-03 to 2011-12 (10 yrs).

Note 2: Revenue Receipts (col. 2 to 5) have been estimated with a lesser annual growth rate than the present CAGR (10 yrs)

Note 3: The non-plan expenditures (col. 10) have been estimated with a higher annual growth rate than the present CAGR (10 yrs).

* Minimum expected from the GoI

** Applicable to years 2014-15 onwards

Total Fund Required Till 2026-27

(Rs. In crore)

Sr. No.	Sectors/Sub-Sectors	Estimated Total Fund Required at Current Prices (2014-15) (Rounded Off to Next Thousand)	Period (yrs)
1	2	3	4
1	Water Resources/ CADA/Water Conservation/ Drinking Water & Sanitation	140000	8 (Upto 2021-22)
2	Connectivity (Including Port Connectivity)	105000	13 (Upto 2026-27)
3	1. Agriculture	81193	
4	2. Animal Husbandry / Dairy Development / Fisheries#	7718	
5	3. Co-operation#	7718	
6	Agriculture & Allied Sector	97000	13 (Upto 2026-27)
7	Public Health*	56000	13 (Upto 2026-27)
8	Education (Primary, Secondary, Higher, Technical & Medical)**	56000	13 (Upto 2026-27)
9	Power#	45000	13 (Upto 2026-27)
10	Total Fund Required	499000	

* This is State Sector Plan excluding central share of NRHM.

** Taken on lump sum basis as figures in the chapter include non-plan expenditure also.

Taken on lump sum basis as no specific figures were provided by the department.

Annex 4.3

Department wise Outlay for XIth FYP
(Sectors Covered by the Committee)

(Rs. In Crore)

Sr. No.	Department	Total XI th FYP Outlay	A. P. Outlay 2012-13
1	2	3	4
1	Water Resources	33777	7404
2	CADA	226	44
3	Water Conservation	4389	1148
4	Water Supply & Sanitation	4221	1042
	Sub-Total	42613	9638
5	PWD - Roads	14418	4285
6	Home - Transport	865	271
	Sub-Total	15283	4556
7	ADF	1089	438
8	Agriculture	3430	1140
9	Co-operation	962	357
	Sub-Total	5482	1935
10	School Education	4870	1534
11	Higher Education	459	127
12	Technical Education	2635	807
13	Medical Education	1051	312
	Sub-Total	9016	2781
14	Public Health	5249	2022
15	Energy	9197	2638
16	Total	86839	23570

**Department wise Outlay for XIth FYP
(Other Sectors)**

(Rs. In Crore)

Sr. No.	Department	Total XI th FYP Outlay	A. P. Outlay 2012-13
1	2	3	4
1	Textile	668	247
2	Employment & Self Employment	51	14
3	Environment	38	16
4	GAD	1004	581
5	GAD - IT	129	30
6	Publicity	29	9
7	Housing	8743	1860
8	Home - Police	1484	506
9	Tourism & Cultural Affairs	1208	432
10	Industry	235	106
11	Labour	105	41
12	Law & Judiciary	451	167
13	Planning	7330	2018
14	Planning - EGS	4360	898
15	PWD - Building	614	223
16	Forest	1025	449
17	Relief & Rehabilitation	654	201
18	Revenue	651	188
19	Sports	889	216
20	Social Justice	10361	3146
21	Tribal Development	7306	2267
22	Urban Development	16337	4349
23	VJ, NT and OBC Welfare	1333	509
24	Finance	2	5
25	Minorities Development	755	243
26	Food, Civil Supplies & Consumer Protection	76	48
27	Marathi Language	7	16
28	Legislature Secretariat	25	25
29	Rural Development	5585	1509
30	Women & Child Development	2831	1112
31	Total (Other Sectors)	74285	21430
	Grand Total		
	(Row at sr. no. 31 (Other Sectors) & row at sr. no. 16 (Sectors Covered by the Committee)	161124	45000

Source: Planning Department, GoM

Annex 4.4

Year wise Projections of Fund Required and Resources Available Till 2026-27

(Rs. In Crore)

Year	Funds Required as Per Committee's Recommendations										Total of Other Sectors (Not covered by Committee i.e. Non-divisible Plan)	Total Plan Funds Required Col. (9+10)	Total Resources Available (As Per Annex 4.1, Col. 11)
	Water Sector	Connectivity	Agriculture & Allied Sector	Public Health	Education	Power	Total Divisible (Excluding Water Sector) (Col 3:7)	Total Divisible (Including Water Sector) Col. (2+8)	9	10			
1	2	3	4	5	6	7	8	9	10	11	12		
2014-15	13349	5750	4313	3163	3163	2300	18688	32036	22964	55000	61590		
2015-16	15261	6574	4931	3616	3616	2630	21366	36627	26254	62882	72146		
2016-17	17332	7466	5600	4106	4106	2986	24265	41597	29817	71414	83479		
During Remaining XIIth Plan	45942	19790	14843	10885	10885	7916	64319	110261	79035	189296	217215		
2017-18	19572	8431	6323	4637	4637	3372	27401	46973	33670	80642	96807		
2018-19	21992	9474	7105	5210	5210	3789	30789	52781	37834	90615	112503		
2019-00	24606	10599	7950	5830	5830	4240	34448	59054	42330	101383	131011		
2020-21	27426	11814	8861	6498	6498	4726	38396	65821	47181	113002	152864		
2021-22	30466	13124	9843	7218	7218	5249	42652	73118	52411	125529	178694		
During XIIIth Plan	124061	53442	40081	29393	29393	21377	173686	297747	213424	511171	671879		
2022-23	33512	14436	10827	7940	7940	5774	46917	80430	57652	138082	209259		
2023-24	36864	15880	11910	8734	8734	6352	51609	88473	63417	151890	245464		
2024-25	40550	17468	13101	9607	9607	6987	56770	97320	69759	167079	288391		
2025-26	44605	19214	14411	10568	10568	7686	62447	107052	76735	183787	339335		
2026-27	49066	21136	15852	11625	11625	8454	68692	117757	84408	202165	399844		
During XIVth Plan	204597	88134	66100	48474	48474	35254	286435	491032	351970	843002	1482294		
Up to XIVth Plan	374600	161366	121025	88751	88751	64546	524440	899040	644429	1543469	2371388		

Note 1: All figures are at current prices and inflation rate has been assumed to be 5% per annum as is the practice followed by the Central Finance Commission.

Note 2: This Annex shows the total plan fund required (col. 11) vis-a-vis the resources available (col. 12) upto 2026-27 by applying the allocation formula recommended by the Committee.

Note 3: The sectoral figures shown for various years upto 2026-27 should not be construed as specific allocations recommended by the Committee for that year.

Note 4: This table only indicates the estimated fund requirement and resource projection and is not meant to be showing the yearly allocations.

Note 5: Table indicates that by applying Committee's allocation formula, the projected plans up to 2026-27 will be within resources (col.11 and col. 12).

Connectivity (Proportions from Annexes 3.2 and 3.3)

Parameter	Weights	Vidarbha	Marathwada	Rest of Maharashtra
1	2	3	4	5
Road Density	0.70	0.48	0.28	0.23
Railway Density	0.30	0.31	0.37	0.31
Connectivity	1.00	0.43	0.31	0.26

Education & Skill Development (Proportions from Annex 3.4)

Parameter	Weights	Vidarbha	Marathwada	Rest of Maharashtra
1	2	3	4	5
SSC Students Registered	0.70	0.37	0.37	0.26
ITI Intake Capacity	0.30	0.35	0.41	0.24
Education & Skill Dev.	1.00	0.36	0.38	0.25

Development Gap (Proportions from above Tables & Annexes 3.5 to 3.7)

Parameter	Weights	Vidarbha	Marathwada	Rest of Maharashtra
1	2	3	4	5
Connectivity	0.20	0.43	0.31	0.26
Education & Skill Dev.	0.20	0.36	0.38	0.25
Health	0.20	0.41	0.36	0.23
Credit Availability	0.20	0.36	0.37	0.27
Power	0.20	0.38	0.43	0.19
Development Gap	1.00	0.39	0.37	0.24

**Proportions Excluding Mumbai (Other than Water)
(From above Tables & Annexes 3.8, 3.9)**

Parameter	Weights	Vidarbha	Marathwada	Rest of Maharashtra
1	2	3	4	5
Population	0.45	0.23	0.19	0.58
Development Gap	0.25	0.39	0.37	0.24
PCI	0.20	0.38	0.43	0.19
Area	0.10	0.32	0.21	0.47
Overall Proportion	1.00	0.3078	0.2851	0.4071

Annex 4.6

Water Deficit						
Division/ Region	Development Deficit (Rs. In Crore)	Proportion	Drinking Water Deficit (Rs. In Crore)			Proportion
			Rural	Urban	Total	
1	2	3	4	5	6	7
Amaravati	25258		805	3128	3933	
Nagpur	21916		479	1993	2472	
Vidarbha	47174	0.48	1284	5121	6405	0.22
Aurangabad	19763		1304	5280	6584	
Marathwada	19763	0.20	1304	5280	6584	0.23
Konkan	13780		1430	4343	5773	
Nashik	8054		1495	2086	3581	
Pune	9241		1671	4594	6265	
Rest of Maharashtra	31075	0.32	4596	11023	15619	0.55
Maharashtra	98012	1.00	7184	21424	28608	1.00

Overall Water Deficit (Proportion)				
Region	Weights	Vidarbha	Marathwada	Rest of Maharashtra
1	2	3	4	5
Drinking Water Deficit	0.50	0.22	0.23	0.55
Development Deficit	0.50	0.48	0.20	0.32
Proportions	1.00	0.3526	0.2159	0.4315

Annual Allocation Pattern-(Illustrative)

Part-I						(Rs. In Crore)
						(Figures other than percentages rounded off)
State Plan Size (Say)		A	65000		As Per Present Percentage	
SCSP	10.2	% Of A	B	6630	As Per Present Percentage	
TSP	8.9	% Of A	C	5785	As Per Present Percentage	
State General Plan (After SCSP & TSP)		A-(B+C)	D	52585		
Total Water Sector Plan (Priority Allocation)	30	% Of D	E	15776	As Per Recommended Fixed Level of Allocation	
State General Plan (After SCSP/TSP/Water)		(D-E)	F	36810		
Divisible State General Plan	60	% Of F	G	22086	As Per Recommended Floor Level of Allocation	
Non-Divisible State General Plan		(F-G)	H	14724		
Floor Levels For DPCs and Talukas						
Allocations to All DPCs in the State	30	% Of G	I	6626	As Per Recommended Floor Level of Allocation	
Allocations to All Talukas in the State	30	% Of G	J	6626	As Per Recommended Floor Level of Allocation	
Balance Divisible Regional Plan		G-(I+J)	K	8834		
Sectorwise Floor Levels (L to P)						
Connectivity(Road,Rail,Port,Air)	20	% Of G	L	4417	As Per Recommended Floor Level of Allocation	
Agriculture & Allied(Including ADF & Cooperation)	15	% Of G	M	3313	As Per Recommended Floor Level of Allocation	
Power	8	% Of G	N	1767	As Per Recommended Floor Level of Allocation	
PublicHealth	11	% Of G	O	2429	As Per Recommended Floor Level of Allocation	
Education (Primary,Secondary,H & TE,Medical)	11	% Of G	P	2429	As Per Recommended Floor Level of Allocation	
Divisible State General Plan (Remaining)		G-(L:P)	Q	7730		
Regional (Other Sectors) Plan		Spatial Allocations			Vidarbha	Marathwada
Regional (Other Sectors) Plan Allocation(%)		R	100	30.78 %	28.51 %	Rest of Maharashtra
Allocations to DPCs in The Regions		Out of I	I	6626	2039	1889
Allocations to Talukas in The Regions		Out of J	J	6626	2039	1889
Balance Divisible Regional Plan		Out of K	K	8834	2719	2519
Total Regional (Other Sectors) Allocations		G	22086	6797	6297	8991
Regional (Other Sectors) Plan		Sectoral Allocations			Vidarbha	Marathwada
Connectivity (Road,Rail,Port,Air)		L	4417	1359	1259	1798
Agriculture & Allied (Including ADF & Coop.)		M	3313	1020	945	1349
Power		N	1767	544	504	719
Public Health		O	2429	748	693	989
Education (Primary,Secondary,H & TE,Med.)		P	2429	748	693	989
Divisible State General Plan (Remaining)		Q	7730	2379	2204	3147
Total Regional (Other Sectors) Allocations		G	22086	6797	6297	8991

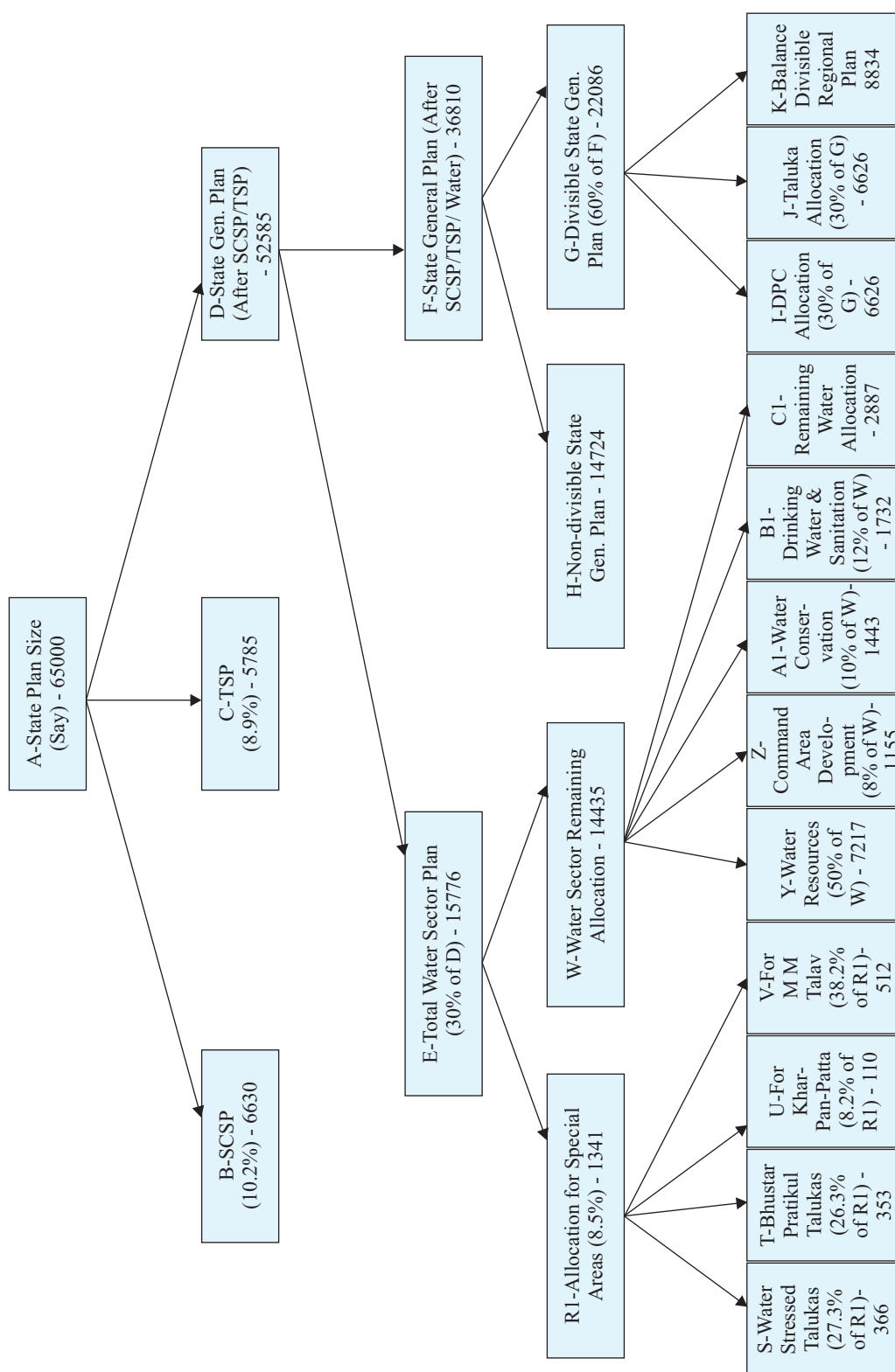
Annual Allocation Pattern-(Illustrative)

(Rs. In Crore)

Part-II		(Figures other than percentages rounded off)									
State Plan Size (Say)		A		65000							
SCSP		B		6630						As Per Present Percentage	
TSP		C		5785						As Per Present Percentage	
State General Plan (After SCSP & TSP)		D		52585							
Total Water Sector Plan (Priority Allocation)		E		15776						As Per Recommended Fixed Level of Allocation	
Allocations to Special Area (Out of E)		R1		1341						As Per Recommended Fixed Level of Allocation	
(a) For Water Stressed Talukas		S		366						As Per Recommended Fixed Level of Allocation	
(b) For 'Bhustar Pratikul' Talukas		T		353						As Per Recommended Fixed Level of Allocation	
(c) For 'Khar-Pan-Patta'		U		110						As Per Recommended Fixed Level of Allocation	
(d) For 'M.M.Talav (M.M.)'		V		512						As Per Recommended Fixed Level of Allocation	
Water Sector (Remaining Allocation)		W		14435						For Entire Water Sector	
State General Plan (After SCSP/TSP/Water)		F		36810							
Divisible State General Plan		G		22086						As Per Recommended Floor Level of Allocation	
Non-Divisible State General Plan		H		14724							
Part-III											
Regional (Water Sector Plan) Allocations						Vidarbha		Marathwada		Rest of Maharashtra	
(a) For Water Stressed Talukas		S		366		25		108		233	
(b) For 'Bhustar Pratikul' Talukas		T		353		50		62		241	
(c) For 'Khar-Pan-Patta'		U		110		110					
(d) For 'M.M.Talav (M.M.)'		V		512		512					
Recommended Floor Levels (Y to B1) Shown Below (Regional Shares of W)		X				35.26%		21.59%		43.15%	
Water Resources Development		Y		7217		2545		1558		3114	
Command Area Development		Z		1155		407		249		498	
Water Conservation		A1		1443		509		312		623	
Drinking Water & Sanitation		B1		1732		611		374		747	
Regionwise Remaining (For S to V & Y to B1)		C1		2887		1018		623		1246	
Regionwise Water Sector Allocations		W		14435		5090		3116		6229	
Total Regional Water Sector Allocations		D1		15776		5787		3287		6702	
Total Regional Water Sector Allocations (%)		Regional Shares of D1		E1		36.68%		20.83%		42.49%	
Part IV											
Overall Regionwise Allocations						Vidarbha		Marathwada		Rest of Maharashtra	
Total Regional Water Sector Allocations		As at E or D1		D1		5787		3287		6702	
Regional General Plan (Except Water)		As at G		G		6797		6297		8991	
Overall Regional Divisible Plan Allocations		(D1+G)		F1		12584		9584		15693	
Overall Regional Divisible Plan (In Percent)		Overall Regional Shares of F1		G1		33.24%		25.31%		41.45%	

Regional Allocation Pattern: Flowchart - Sector wise (Illustrative)

(Rs. In Crore)



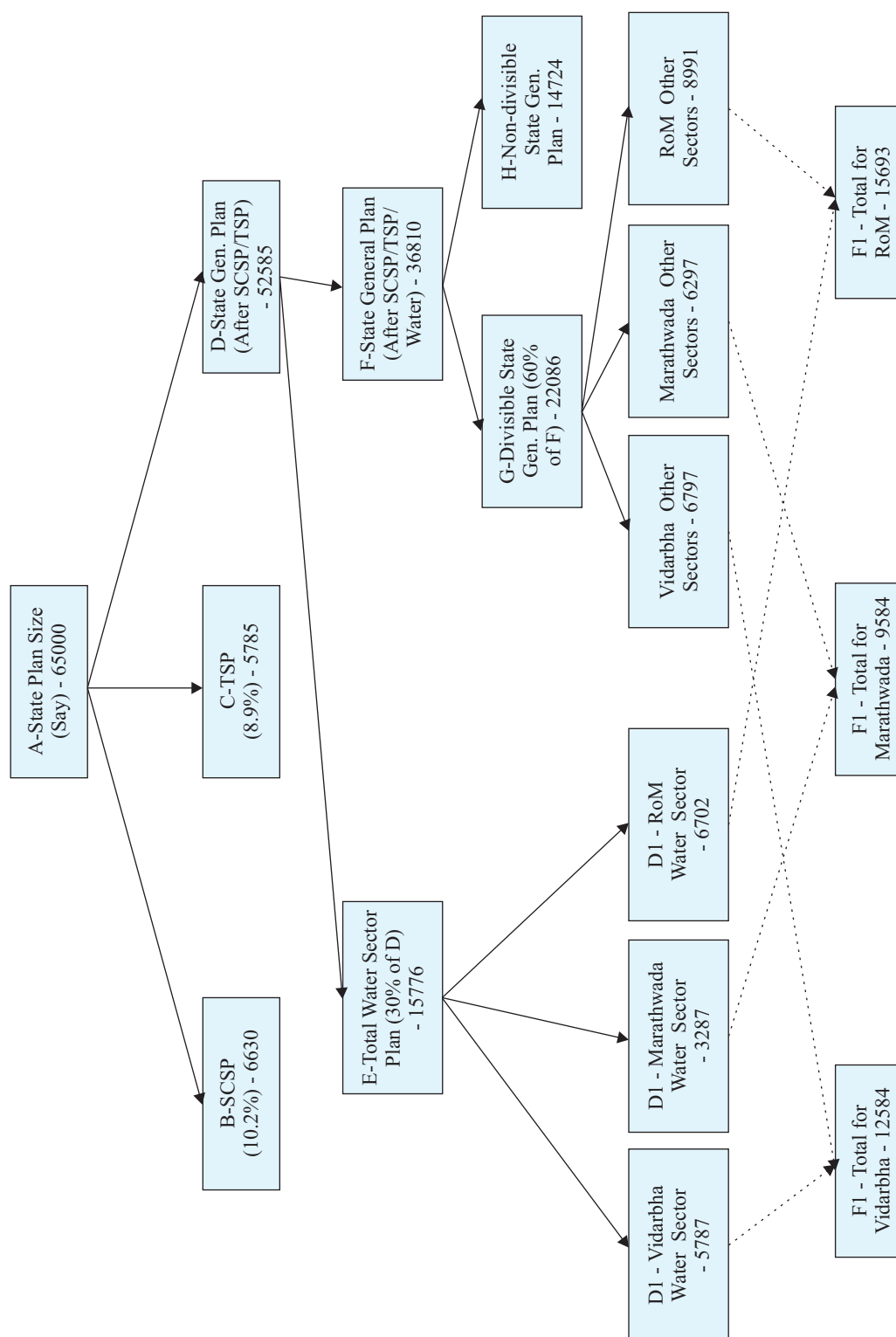
Note: 1. CI - Remaining Water Allocation can be allocated to S, T, U, V, Y, Z, A1 and B1

Note: 2. G - Divisible State Gen. Plan to be allocated to various sectors L, M, N, O and P with minimum floor level as shown in Annex 4.7 (Excluding Water)

Note: 3. Above illustration is based on floor level allocations. Amounts will change if more than floor level allocations are made.

Regional Allocation Pattern: Flowchart - Region wise (Illustrative)

(Rs. In Crore)



Note : Above illustration is based on floor level allocations. Amounts will change if more than floor level allocations are made.

Annex 6.1

Outlay and Expenditure for Removal of Backlog from 1985-86 to 2008-09

(Rs. in Crore)

Year	Total		Vidarbha		Marathwada		Rest of Maharashtra	
	Outlay	Exp.	Outlay	Exp.	Outlay	Exp.	Outlay	Exp.
1	2	3	4	5	6	7	8	9
1985-86	200	133	61	44	50	32	89	57
1986-87	250	181	70	58	61	48	119	75
1987-88	300	244	103	90	74	60	123	94
1988-89	400	365	137	141	96	79	167	145
1989-90	500	437	174	155	100	91	226	191
1990-91	450	413	172	161	84	77	193	175
1991-92	485	416	177	157	91	81	217	178
1992-93	498	481	187	190	110	109	201	182
1993-94	498	486	205	174	98	112	195	200
1994-95	500	691	180	238	125	161	195	291
1995-96	700	732	307	305	191	175	202	251
1996-97	900	760	404	383	235	195	260	183
1997-98	1100	1181	504	434	312	277	284	869
1998-99	1100	909	455	306	292	277	353	325
1999-2000	1100	916	455	362	292	266	353	288
2000-01	1100	917	455	397	292	301	353	219
2001-02	1720	947	461	373	491	351	368	324
2002-03	1060	268	353	108	263	82	444	78
2003-04	1190	270	416	93	270	84	504	92
2004-05	2182	184	746	70	496	53	940	61
2005-06	1400	875	480	406	315	158	606	310
2006-07	1475	787	502	321	322	164	651	303
2007-08	1400	898	444	306	311	244	645	348
2008-09	1400	877	375	333	337	153	688	390
Total	21908	14367	7822	5607	5308	3632	8378	5630
Exp. (%)		66		72		68		67

Source: State Annual Plan, Planning Department, GoM, 2012-13

Annual Plan (2001-02 to 2012-13) Details

(Rs. in crore)

Sr. No.	Year	Total Plan	SCSP	TSP	DPC	Plan Excluding SCSP, TSP and DPC	Vidarbha	Marath-wada	RoM	Divisible	Non-Divisible
1	2	3	4	5	6	7	9	10	11	12	14
1	2001-02	10834	743	567	770	8755	1619	1146	3342	6107	2647
2	2002-03	11562	715	585	750	9512	1665	1328	3871	6864	2648
3	2003-04	12053	751	556	750	9996	1954	1306	4197	7457	2539
4	2004-05	9665	656	530	750	7729	1093	1244	2658	4995	2734
5	2005-06	11014	1122	990	700	8202	1519	986	3023	5527	2675
6	2006-07	14829	1592	1390	900	10947	2448	1756	5043	9247	1700
7	2007-08	20250	2060	1590	1080	15520	4228	2850	6851	13928	1592
8	2008-09	25000	2333	2239	2000	18429	5046	3076	8703	16827	1601
9	2009-10	35958	2652	2314	2500	28492	5915	3378	11446	20739	7753
10	2010-11	37916	3867	3374	3829	26846	6695	3789	10379	20862	5984
11	2011-12	42000	4284	3738	4320	29659	6588	3669	11673	21930	7729
12	2012-13	45000	4590	4005	4950	31455	6662	3864	11196	21723	9732
Total (Planwise)		276081	25365	21878	23298	205541	45432	28393	82382	156206	49335
Sub Plans to Total Plan (%)		9.2	7.9	8.4	74.4	16.5	10.3	29.8	56.6	17.9	
Divisible vs Non-Divisible (%)						100.0				76.0	24.0
Regional Allocation to Divisible Plan (%)							29.1	18.2	52.7	100.0	

Source : Planning Department, GoM

Annex 6.3

Trends of Plan and Non-Plan Expenditure

<i>(Rs. in Crore)</i>					
Year	Total Exp.	Plan Exp.	Non Plan Exp.	% Plan Exp.	% Non Plan Exp.
1	2	3	4	5	6
2002-03	61215	5167	56048	8.4	91.6
2003-04	70446	7570	62876	10.7	89.3
2004-05	76206	9229	66977	12.1	87.9
2005-06	72361	12980	59381	17.9	82.1
2006-07	78506	17135	61371	21.8	78.2
2007-08	82194	19998	62196	24.3	75.7
2008-09	99972	25692	74280	25.7	74.3
2009-10	117781	31879	85902	27.1	72.9
2010-11	138553	38061	100492	27.5	72.5
Total	797234	167711	629523	21.0	79.0

Source: Economic Survey of Maharashtra, GoM, 2005-06 to 2010-11

Chief Ministers from the Three Regions (Post 1991)

Sr. No.	Vidarbha	Marathwada	RoM
1	2	3	4
1	Shri Sudhakar Naik (Jun '91-Feb'93)		
2			Shri Sharadrao Pawar (Mar '93-Mar '95)
3			Shri Manohar Joshi (Mar '95-Jan '99)
4			Shri Narayan Rane (Feb '99- Oct '99)
5		Shri Vilasrao Deshmukh (Oct '99-Jan '03)	
6			Shri Sushilkumar Shinde (Jan '03-Oct'04)
7		Shri Vilasrao Deshmukh (Nov '04-Dec '08)	
8		Shri Ashokrao Chavan (Dec '08-Nov '09)	
9		Shri Ashokrao Chavan (Nov '09-Nov '10)	
10			Shri Prithviraj Chavan (Nov '10 onwards)

Source: Palshikar, Suhas. (2012), Reimagining Maharashtra-Moving Towards Creative Politics

Annex 6.5

Sharing of Important Cabinet Portfolios: Indicative Chart

Sr. No.	Key Portfolios	Number of Ministers from Three Regions		
		Vidarbha	Marathwada	RoM
1	2	3	4	5
	Mar, '95 (09th Vidhan Sabha)			
1	Home		√	
2	Finance & Planning			√
3	Energy		√	
4	Revenue			√
5	Urban Development			√
6	Irrigation	√ Part	√ Part	
7	PWD	√ Part	√ Part	
	Oct, '99 (10th Vidhan Sabha)			
1	Home			√
2	Finance & Planning			√
3	Energy		√ Part	√ Part
4	Revenue		√	
5	Urban Development		√ Part	√ Part
6	Irrigation		√ Part	√ Part
7	PWD			√
	Nov, '04 (11th Vidhan Sabha)			
1	Home			√
2	Finance & Planning			√
3	Energy			√
4	Revenue		√ Part	√ Part
5	Urban Development		√	
6	Irrigation			√
7	PWD	√ Part	√ Part	√ Part
	Nov, '09 (12th Vidhan Sabha)			
1	Home			√
2	Finance & Planning			√
3	Energy		√ Part	√ Part
4	Revenue			√
5	Urban Development		√ Part	√ Part
6	Irrigation			√
7	PWD		√ Part	√ Part

Source: Protocol Department, GoM

Excerpts from Dr. Palashikar's Report

Sharing of political power always poses a dilemma. Fairness requires that all regions share power adequately or reasonably fairly. At the same time, power sharing is a function of leadership and political dynamics and cannot be artificially regulated beyond a point. Below, we take into account two aspects: chief ministerial appointments and distribution of key portfolios. Though of course, a caveat must be entered here: no discussion of power sharing on a regional basis is likely to be satisfactory to all claimants concerned because while Vidarbha and Marathwada are recognized as regions having legitimate claims over power sharing, whether this power sharing is to be done by calculating 'rest of Maharashtra' as one regional unit or by taking into account Konkan, Mumbai, North Maharashtra and Western (west and south) Maharashtra as distinct regions, will always be a contentious issue.

But there is another crucial factor—distribution of portfolios among ministers. We consider the portfolios of Home, Finance, Urban Development, Rural Development, Revenue, Industries, Agriculture, Cooperation, Irrigation and Public Works as the ten most crucial portfolios. An ongoing study, by Datar and Ghotale (Datar-Ghotale; 2012), shows that during the period 1960-1990, out of these ten only two or three portfolios used to be with ministers from western Maharashtra with the exception of the ministries led by Pawar and Vasantdada Patil. This leads to the surmise that after Y.B. Chavan, whenever a leader from Western Maharashtra became Chief Minister, the share of western Maharashtra increased. However, since 1999, even when the chief minister is from Marathwada, share of ministers from western Maharashtra has remained in the range of five and seven out of ten. Thus, it might be argued that the political balance has been lost during the last two decades.

This political imbalance is important for three reasons. Firstly, it gives credence to the argument that if ministers from Vidarbha and Marathwada are not in charge of key portfolios, the allocation of resources for those regions can be somewhat less than satisfactory, leading to continuation of the 'backlog' and infrastructural inadequacies. Secondly, in terms of democratic power sharing in a state (and in the context of the Nagpur agreement in particular, in the case of Maharashtra) this skewed distribution of portfolios is in itself problematic. Thirdly, such matters also have a symbolic significance. Thus, even if we were to assume that ministers from Vidarbha and Marathwada would not/did not do much for those regions, symbolically, an institutional arrangement has to assuage representational anxieties and concerns. Therefore, apart from the challenges of actual infrastructure development and overall issue of backlog (which this overview does not take into account), politically, the composition of the cabinets poses an important issue. In practical political terms, this issue is not easy to resolve because it would mean an artificial intervention in the existing power equations and denying cabinet positions or portfolios to actually powerful political leaders. It would require a spirit of compromise, a commitment to the cause of 'Maharashtra'—a rededication to the dream of Maharashtra; reimagining the idea of Maharashtra and it would also require a politics based on statesmanship rather than contingent manipulations.

Source: Palshikar, Suhas. (2012), Reimagining Maharashtra-Moving Towards Creative Politics: Overview and Suggestions
Detailed Report is Available on website: samatolvikas.org

Annex 6.7

Vidarbha Related Issues Discussed in Nagpur Session: Indicative Chart

Sr.	Year	Vidarbha Related Issues Discussed
1	2	3
1	2009	1) Naxalite movement 2) Problem of suicide in Vidarbha region 3) Malnutrition in Melghat region 4) Problem of project affected persons belonging to Lower Wardha and Upper Wardha projects 5) Damage to crops due to untimely heavy rains in Chandrapur, Gadchiroli, Bhandara and Gondia districts 6) Swine flu in Nagpur 7) Lift irrigation schemes in Vidarbha 8) Gorewada zoo 9) Shegaon-Khamgaon-Chikhali-Jalna railway 10) Mihan project 11) Ring road in Nagpur 12) Backlog in Vidarbha region
2	2010	1) Improvement in Mayo Hospital, Nagpur 2) Backlog in Vidarbha region and financial package 3) Rural hospital in Arvi 4) Ram Zula bridge in Nagpur 5) Law and order in Vidarbha 6) Kalmana food market 7) Medical college in Gondia 8) Delayed irrigation project – Ghosikhurd
3	2011	1) Star bus service – Nagpur Municipal Corporation 2) Arunavati project in Digra Taluka 3) Buldhana, Akola, Washim, Yavatmal – Kharland question 4) Water supply scheme in Buldhana city 5) Bhandewadi – Bhathoda dumping ground question in Nagpur city 6) Irrigation backlog in Vidarbha 7) Rambaug slum question

Source : Commonwealth Parliamentary Association, Maharashtra Branch, Nagpur Session-Myth and Reality, 2012

(i) Employment of People from Three Regions in Government Service

Region	Staff Grade					Total
	A	B	C	D	E*	
1	2	3	4	5	6	7
Rest of Maharashtra	10432	25936	185799	66925	14386	303478
% to total	44.9	53.5	55.4	52.8	24.2	51.2
Marathwada	4491	8263	53828	20793	5890	93265
% to total	19.3	17.0	16.1	16.4	9.9	15.7
Vidarbha	6205	11648	84518	31288	9956	143615
% to total	26.7	24.0	25.2	24.7	16.7	24.2
Others	2125	2661	10998	7823	52859	
% to total	9.1	5.5	3.3	6.2	49.2	8.9
Total	23253	48508	335143	126829	59484	593217

* Contractual/Temporary Workers, Directorate of Economics & Statistics, GoM, 2008

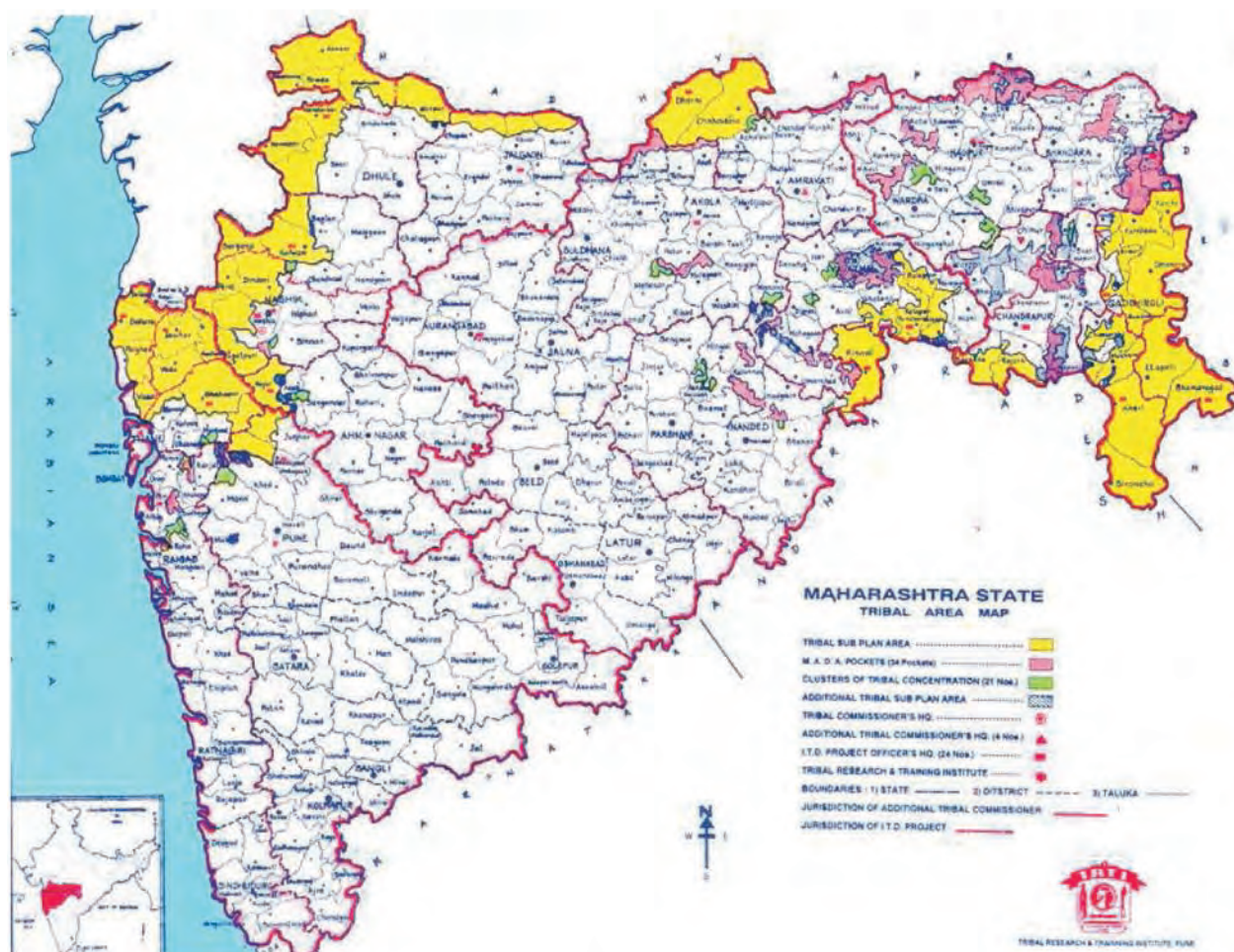
(ii) Region wise Vacant Positions

Region	Staff Grade					Total
	A	B	C	D	E*	
1	2	3	4	5	6	7
Rest of Maharashtra	3057	8126	44506	12132	11229	79050
% to total	58.2	62.0	62.5	59.9	48.8	59.5
Marathwada	775	1913	9875	2874	4149	19586
% to total	14.8	14.6	13.9	14.2	18.0	14.7
Vidarbha	1419	3071	16861	5260	7642	34253
% to total	27.0	23.4	23.7	26.0	33.2	25.8
Total	5251	13110	71242	20266	23020	132889

* Contractual/Temporary Workers, Directorate of Economics & Statistics, GoM, 2008



Tribal Areas in Maharashtra



Comparison of Development Indicators

(In percent)

No.	Indicator	General State Population	Scheduled Tribes	Percentage Difference
1	2	3	4	5
1	Literacy (2007-08) Rural			
	Male	86.3	69.1	19.9
	Female	69.1	40.9	40.8
2	Gross Enrolment Ratio (2007-08)			
	Upper Primary	86.8	83	4.4
	Secondary and Higher Secondary	56.5	35.1	37.9
3	Net Attendance Ratio (Upper-Primary) Rural (2007-08)	81.5	53.2	34.7
4	Out of School Children (6-17 years) (2007-08)	15.9	34.5	117.0
5	Average Annual Expd. per Student (5-29 years) (Rs.) General Education (2007-08)	4511	1297	71.3
6	Percentage of Children Immunized (2005-06)	62.5	39.3	37.1

Source: Planning Commission, 2011:253-403

Annex 7.3

Ranking of Talukas on Development Indices

Rank	Top 15 Talukas	District	District	Bottom 15 Talukas (All Tribal)	Rank
1	2	3	4	5	6
1	Pune City	Pune	Thane	Dahanu	342
2	Nagpur City	Nagpur	Amaravati	Chikhaldara	343
3	Thane City	Thane	Nandurbar	Navapur	344
4	Haveli	Pune	Nashik	Trimbak	345
5	Nashik	Nashik	Gadchiroli	Etapalli	346
6	Kalyan	Thane	Thane	Javhar	347
7	Panvel	Raigad	Thane	Talasari	348
8	Mumbai	Mumbai	Nashik	Surgana	349
9	Vasai	Thane	Nashik	Peth	350
10	Ulhasnagar	Thane	Thane	Vikramgad	351
11	Satara	Satara	Gadchiroli	Sironcha	352
12	Karvir	Kolhapur	Thane	Mokhada	353
13	Ambernath	Thane	Nandurbar	Akkalkuva	354
14	Wardha	Wardha	Gadchiroli	Bhamaragad	355
15	Nagpur Rural	Nagpur	Nandurbar	Akrani	356

Source: YASHADA, 2012 (Unpublished)

Expenditure Shortfall in Tribal Sub-Plan from 1993-94 to 2010-11

(Rs. in crore)

YEAR	State Plan Outlay	State Plan Actual Exp.	Expected Provision for T.S.P. at 8.9%	Operational Provision for TSP	Actual Exp. Under TSP	Shortfall (4-6)	% of TSP Exp. to Annual State Exp.	% TSP Exp. to Operational Provision
1	2	3	4	5	6	7	8	9
1993-94	3804	3781	342	265	266	76	7.0	100.4
1994-95	4400	5122	396	330	275	121	5.4	83.3
1995-96	6069	6627	546	413	412	134	6.2	99.9
1996-97	8284	6848	746	589	535	211	7.8	90.9
1997-98	8325	7938	749	550	498	251	6.3	90.5
1998-99	11601	8187	1044	561	520	524	6.4	92.7
1999-00	12162	10419	1095	581	467	628	4.5	80.4
2000-01	12330	9586	1110	525	444	666	4.6	84.6
2001-02	11721	8526	1055	567	367	688	4.3	64.7
2002-03	11135	7539	1002	585	323	679	4.3	55.3
2003-04	12650	8188	1139	556	450	688	5.5	81.0
2004-05	9447	9817	850	530	376	474	3.8	71.0
2005-06	11000	14674	990	990	929	61	6.3	93.8
2006-07	14829	15681	1335	1389	1323	12	8.4	95.3
2007-08	20200	19422	1818	1798	1659	159	8.5	92.3
2008-09	25000	22861	2250	1942	2027	223	8.9	104.4
2009-10	37915	27731	3412	2314	2130	1282	7.7	92.0
2010-11	33935	32577	3054	3374	2323	731	7.1	68.8
Total	254806	225525	22933	17857	15325	7608	6.8	85.8

(Ref : State Annual Plan and Tribal Sub-Plan 1993-94 to 2010-11)
 (Samarthan Arthsankalp Adhyan Kendra, Mumbai)

Annex 8.1

YoY Growth in GDDP - Agriculture & Allied Activity - At Constant (2004-05) Price				
Regions	Maharashtra Minus Mumbai	RoM Minus Mumbai	Marathwada	Vidarbha
1	2	3	4	5
1999-00	-	-	-	-
2000-01	-5.2	-0.9	-3.4	-13.1
2001-02	5.0	4.2	0.4	9.0
2002-03	1.3	1.5	8.2	-2.7
2003-04	7.9	12.0	-0.7	5.4
2004-05	-7.5	-0.2	7.7	-30.6
2005-06	9.5	3.5	15.5	21.4
2006-07	14.3	12.5	16.6	16.6
2007-08	14.0	7.9	22.9	20.8
2008-09	-15.8	-5.6	-25.9	-28.8
2009-10	1.1	-1.0	10.3	-1.2
2010-11	19.0	17.3	27.0	16.3
2011-12	4.5	9.1	-1.3	-2.2
Trend (CAGR)	3.6	5.1	6.9	0.3

Agriculture & Allied Activities: Present Status**A. Region wise Area Under Horticultural Crops (2008-09)**

Region	Total Cultivable Land (lakh ha)	Area Under Horticultural Crops (Lakh Ha.)	% Area Under Horticultural Crops
1	2	3	4
Vidarbha	57.45	2.09	3.65
Marathwada	56.67	0.68	1.21
Rest of Maharashtra	102.31	7.18	7.02

Source: Socio Economic Survey of Districts of Maharashtra, 2010

B. Status of Forest in Maharashtra

Region	Geographic Area (Sq. km.)	Total Forest (Sq. km.)	Percent of GA
1	2	3	4
Vidarbha	97404	26990	27.71
Marathwada	64813	1923	2.97
Rest of Maharashtra	145496	21733	14.94
Maharashtra	307713	50646	16.46

Source: India State of Forest Report 2011

C. Region wise Cropping Intensity (%)

Region	2000-01	2010-11
1	2	3
Rest of Maharashtra	117	116
Marathwada	137	146
Vidarbha	121	126
Maharashtra	126	130

D. Regional Imbalance in Mechanization (2010-11)

Region	Number of Tractors/1000ha.	Agricultural Pumps Connections/1000 ha.
1	2	3
Vidarbha	15	107
Marathwada	12	136
Rest of Maharashtra	33	281

Annex 8.2

Agriculture & Allied Activities: Present Status

E. Region wise Livestock Population and Milk Productivity (Livestock Census 2007)

Region	Total in milk	Milk Animal Population Per 1000 Persons	Cultivated Area/ Milk Animal (Ha/Milk Animal)	Cultivated Area/ Animal (Ha/ Animal)	Average Milk Productivity/ Animal (kg./day)
1	2	3	4	5	6
Rest of Maharashtra	3159183	54	2.54	0.73	3.83
Marathwada	1137961	61	4.05	0.92	3.17
Vidarbha	1108818	48	4.51	0.80	2.00
Maharashtra	5405962	54	3.26	0.79	3.63

Source: <http://ahd.maharashtra.gov.in>

F. Region wise Poultry Farms and Poultry Birds

Region	Total Poultry Farms	*Number of Poultry Birds (in lakh)		
		In Poultry Farms	Backyard Poultry	Total
1	2	3	4	5
Rest of Maharashtra	3734	420	141	561
Marathwada	580	22	23	44
Vidarbha	196	6	37	42
Maharashtra	4510	447	200	648

*Includes fowls-cocks/chickens, hen, ducks, turkeys, quails and others (2007 - Eighteenth All India Livestock Census <http://ahd.maharashtra.gov.in>)

G. Region wise Egg and Wool Production

Parameter	Vidarbha	Marathwada	RoM	State
1	2	3	4	5
Egg Production (in lakhs)	5653	3067	29392	38113
Wool Production (in MT)	129	223	1368.23	1721

Per capita requirement of egg is 180 eggs per annum

Agriculture & Allied Activities: Present Status

H. Regionwise Inland Fish Production (in tonne)

Region	2000-01	2011-12
1	2	3
Rest of Maharashtra	33710	48629
Marathwada	17675	25531
Vidarbha	71881	70950
Maharashtra	123266	145110

Source: Fish Production Report, Department of Fisheries, Government of Maharashtra fishery
Source: (<http://.maharashtra.gov.in>)

I. Irrigation Potential Created and Utilization in Different Regions (2009-10)

Region	Irrigation Potential Created (000' ha.)	Actual Irrigated Area (000' ha.)	Percentage of Actual Irrigated Area to Potential Created
1	2	3	4
Rest of Maharashtra	2643.78	2019.68	76
Marathwada	1079.33	413.01	38
Vidarbha	1102.35	522.09	47
Maharashtra	4825.46	2954.78	61

Source: Infrastructure Statistics of Maharashtra State, 2009-10 and 2010-11, Directorate of Economics and Statistics, Planning Dept, GoM, Mumbai

J. Village Road Connectivity

Region	Geographical Area (km2)	Other Roads (km)	Village Road Length (km)	Village Road (km/ km2GA)
1	2	3	4	5
Rest of Maharashtra	144893	69088	58138	0.40
Marathwada	64813	31229	22239	0.34
Vidarbha	97404	34995	26023	0.27
Maharashtra	307110	13453	106400	0.35

Source-Infrastructure Statistics 2009-10 & 2010-11, Directorate of Economics and Statistics, Planning Department, Government of Maharashtra

Annex 8.2

Agriculture & Allied Activities: Present Status

K. Division wise Break-up of APMCs

Division	Main Market	Sub Market
1	2	3
Rest of Maharashtra	115	268
Marathwada	84	163
Vidarbha	101	178
Maharashtra	300	609

Source: <http://www.msamb.com/english/apmc/default.htm>

L. Agriculture Education in Different Regions

Region	SSC Pass out	HSC Pass out (Science Stream)	ATS# Intake	Bachelor's Degree Intake	%ATS Intake to SSC Pass out	% Bachelor's Intake to HSC Pass out
1	2	3	4	5	6	7
Rest of Maharashtra	800892	206448	10180	5124	1.3	2.5
Marathwada	165576	50920	5280	3450	3.2	6.8
Vidarbha	241702	69440	4800	2339	2.0	3.4
Maharashtra	2107270	326802	20260	10813	1.2	3.3

Source: www.mahresult.nic.in (SSC, HSC-March 2012), MCAER, PUNE

*Including Mumbai and Konkan

ATS – Agriculture Technology School

M. Agriculture Research Centers in Different Regions (State Funded)

Region	Number of State funded Agriculture Research Centers	Net cultivated area (lakh ha)	Area coverage per research centre (lakh ha)
1	2	3	4
Vidarbha	20	49.97	2.63
Marathwada	26	46.12	1.77
Rest of Maharashtra	65	80.26	1.23

Agriculture & Allied Activities: Present Status

N. Percent Increase in Small Land Holders in Different Regions Between 2001&2005

Regions	Land Holders Below 2 ha. (Per cent change)
1	2
Rest of Maharashtra	36
Marathwada	15
Vidarbha	15
Maharashtra	17

O. Region wise NPK Consumption (kg/ha.)

Region	N kg/ha		P kg/ha		K kg/ha		NPK kg/ha	
	2000-01	2010-11	2000-01	2010-11	2000-01	2010-11	2000-01	2010-11
1	2	3	4	5	6	7	8	9
Rest of Maharashtra	48	70	15	36	11	26	74	132
Marathwada	39	67	19	49	8	27	65	143
Vidarbha	39	60	21	44	6	17	66	122
Maharashtra	45	73	21	50	11	30	76	153

Source: Commissioner of Agriculture, Maharashtra (2010)

P. Rural Population and Rural Population Pressure on Agriculture

Region	Rural Population		Rural Population (% to total)		*Population Pressure/ha.	
	2001	2011	2001	2011	2000-01	2010-11
1	2	3	4	5	6	7
Rest of Maharashtra	29977688	32957751	61.63	56.66	3.74	4.11
Marathwada	11795366	13649601	75.47	72.88	2.56	3.02
Vidarbha	14004593	14938089	67.88	64.94	2.80	3.00
Maharashtra	55777647	61545441	65.70	61.61	3.16	3.54

Source : <http://www.census2011.co.in/census/district><http://www.censusindia.gov.in>

*Population pressure calculated from net sown area and rural population

Annex 8.2

Agriculture & Allied Activities: Present Status

Q. Agricultural Workforce Per One Lakh Population

Region	Total Population	Agricultural Workforce	Agricultural Workforce as % of Total Population	No. of Agricultural Workforce/ha
1	2	3	4	5
Rest of Maharashtra	58163598	9650000	17	1.20
Marathwada	18727748	4190000	22	0.91
Vidarbha	23003179	4865000	21	0.97
Maharashtra	99894525	18705000	19	1.06

Source: 1. Census 2011. Brief Analysis of Maharashtra Provisional Population 2011 Census, available at www.censusindia.gov.in,
2. Commissioner of Agriculture, Pune

R. Region wise Distribution of Industries Including Agro Industry in State

Region	SSI*	SSSBE	MSI	Total (% of total)
1	2	3	4	5
Rest of Maharashtra	106079	6046	11419	123544 (80)
Marathwada	9488	365	1261	11114 (7)
Vidarbha	18237	970	1485	20692 (13)
Maharashtra				155350 (100)

* Includes agro industries

Source: The State Profile of Maharashtra has been updated by S.I.S.I., Mumbai as apart of the action plan 2000-01 of the institute available at www.sisimumbai.com

Water Requirement of Agriculture for Surface and Micro-Irrigation

Region	Area (Lakh ha)	Area (%)	Water Required for Irrigation	
			Surface Irrigation WR in Mm3	Micro Irrigation WR in Mm3
1	2	3	4	5
Vidarbha	64.18	30	55187	21465
Marathwada	66.03	31	28474	17732
Rest of Maharashtra	85.44	40	114297	62043
Maharashtra	215.65	100	197958	101240

Annex 8.4

Regional Allocations

A. Regional Allocations for Protective Micro-Irrigation of Cotton

Region	Area (lakh ha)	Cost @ Rs59000/ha (Rs. crore)	Annual Allocation for Next 5 Years (Rs. crore)
1	2	3	4
Vidarbha	15.0	8850	1770
Marathwada	15.0	8850	1770
Rest of Maharashtra	11.0	6490	1298
Maharashtra	41.0	24190	4838

Note: Micro-irrigation system of cotton can be used for pigeonpea crop

B. Regional Allocations for Protective Irrigation of Chickpea

Region	Area (lakh ha)	Allocation @ Rs45500/ha (Rs. crore)	Annual Allocation for Next 5 Years (Rs. crore)
1	2	3	4
Vidarbha	5.73	3927	785
Marathwada	4.40	2002	400
Rest of Maharashtra	4.03	1834	367

C. Regional Allocations for Sustainable Paddy Production in Eastern Vidarbha

Region	Area (lakh ha)	Allocation @ Rs 1.8 lakh/ha (Rs. crore)	Annual Allocation for Next 10 Years (Rs. crore)
1	2	3	4
Eastern Vidarbha	7.06	12708	1270

Note: The above annual allocation for development of protective irrigation (Farm Ponds) for paddy crop shall continue till entire paddy area is covered in ten years.

D. Regional Allocations to Promote Mechanization

Region	Number of Tractors	Cultivable Area (Lakh ha)	Command Area/ Tractor (ha)	Number of Additional Tractors Required to Bring Command Area at Par with RoM	Allocation Required to Provide Mechanization (Rs. crore)		Annual Allocation for next 5 Years (Rs. crore)
					Tractor	Implement #	
1	2	3	4	5	6	7	8
Vidarbha	65795	49.8	76	65257	1631	1142	555
Marathwada	55357	45.3	82	63853	1596	1117	543
RoM	209203	79.2	38	-	-	-	-

Implements @Rs. 2.5 lakh/set with 75% subsidy.

Set of implements shall be decided as per local need.

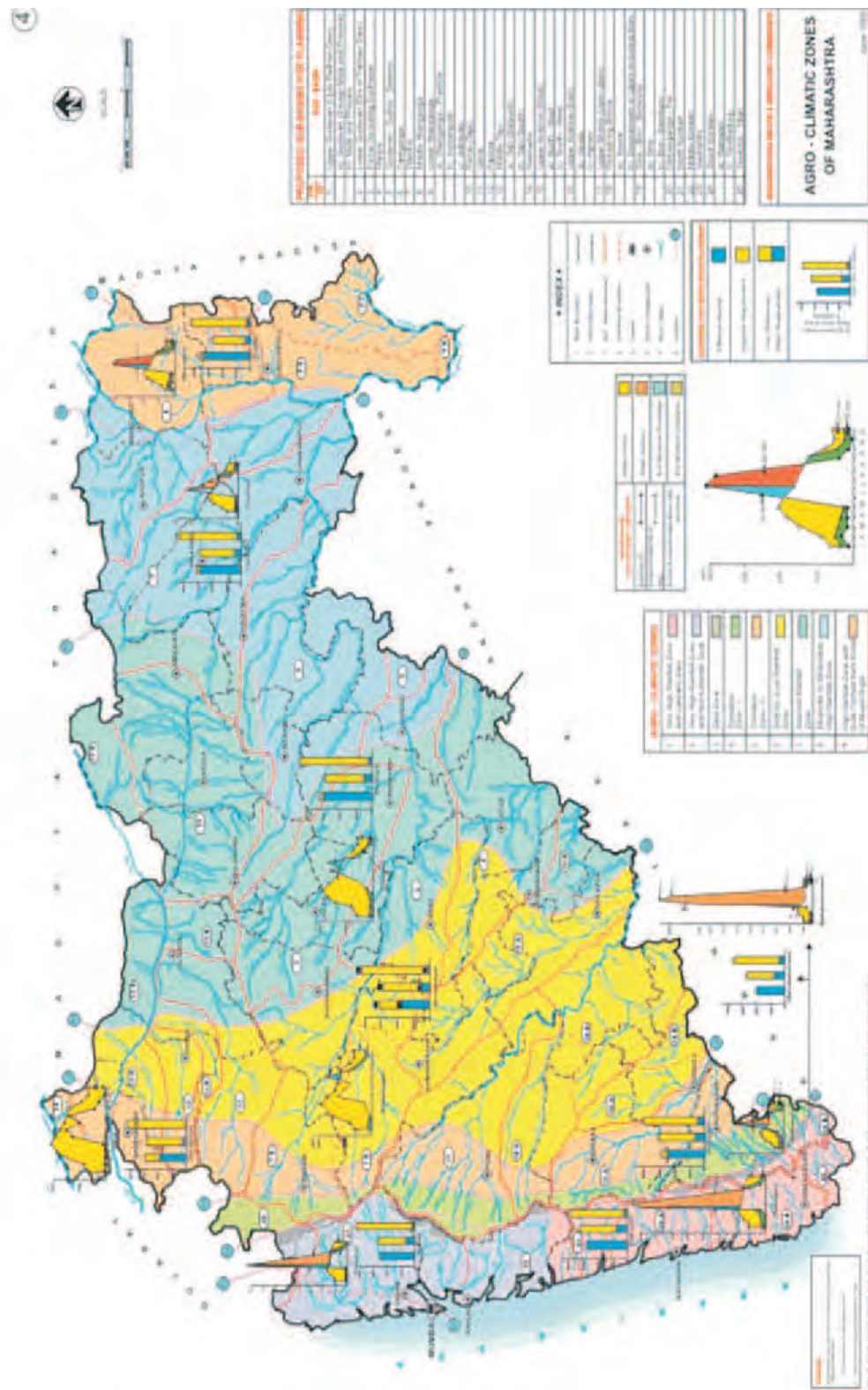
Annex 8.6

List of Agricultural Machineries That Needs Incentives for Next 10 Years

Sr. No.	Agriculture Machinery	Incentives (% of cost)
1	2	3
1	Cotton picker	30
2	Paddy transplanter	50
3	Sugarcane harvester	30
4	Rotavator	50
5	Disc harrow	50
6	Chisel plough	50
7	BBF planter	50
8	Power weeder	50
9	Crop harvester	50
10	Fruit harvesting machines	50
11	Combine (harvesting + threshing)	30
12	Small tractor for horticulture with matching implements	30
13	Pruning machines	50
14	Drudgery reducing tool for women	70
15	Cleaning and grading machines	50



Agro-climatic Zones of Maharashtra



Districtwise Irrigation Potential

(Thousand Ha.)

District	State sector Projected Irrigation Potential	Local Sector Actual Irrigation Potential	Local Sector Indirect Irrigation potential	Total Local Sector Irrigation Potential (Col. 3+4)	Ground Water Availability Potential	Total Irrigation Potential (Col. 2+5+6)	Culturable Command Area (Ha.)	Percentage (Col.7/ Col.8)
1	2	3	4	5	6	7	8	9
Mumbai	-	-	-	-	-	-	31900	-
Thane	46.1	13.9	2.4	16.3	12.7	75.1	445200	16.9
Raigad	21.1	9.0	1.7	10.7	9.3	41.1	377800	10.9
Ratnagiri	17.4	10.7	0.4	11.1	8.1	36.5	571100	6.4
Sindhudurg	13.7	18.0	1.8	19.8	10.9	44.3	367300	12.1
Konkan Region	98.2	51.6	6.3	57.9	40.9	197.0	1793300	11.0
Nashik	211.4	35.5	61.8	97.2	198.6	507.2	1017800	49.8
Dhule	104.3	15.6	37.7	53.3	112.1	269.7	437600	61.8
Nandurbar	85.2	13.6	28.1	41.7	49.8	176.7	311900	56.7
Jalgaon	216.8	19.1	29.8	48.9	179.3	444.9	920200	48.4
Ahmednagar	351.7	67.3	90.2	157.5	281.9	791.1	1391200	56.8
Nashik Region	969.4	151.0	247.6	398.5	821.7	2189.6	4015900	54.5
Pune	394.6	44.3	23.7	67.9	223.7	686.3	1152200	49.6
Solapur	376.0	38.3	34.4	72.7	226.1	674.8	1385500	48.7
Satara	204.5	17.5	27.6	45.1	137.3	386.8	757500	51.1
Sangli	257.3	21.5	11.1	32.5	131.1	421.0	718400	58.6
Kolhapur	309.3	33.8	57.9	91.7	89.1	490.1	542700	90.3
Pune Region	1541.7	155.3	154.6	309.9	807.2	2658.9	4556300	58.3
Aurangabad	131.9	32.0	57.9	89.9	140.3	362.0	856200	42.3
Jalna	89.5	13.6	56.8	70.5	88.5	248.5	737500	33.7
Beed	175.2	5.2	3.1	8.3	127.6	311.0	977100	31.8
Latur	113.2	5.8	3.1	8.9	183.3	305.3	677700	45.0
Osmanabad	118.3	22.7	64.4	87.2	143.7	349.2	743900	46.9
Nanded	197.9	18.7	6.1	24.8	78.4	301.0	916300	32.9
Parabhani	172.7	39.2	39.3	78.5	56.1	307.3	507100	60.6
Hingoli	51.9	16.0	41.0	57.0	72.5	181.4	404593	43.8
Aurangabad Region	1050.5	153.2	271.7	424.9	890.2	2365.7	5930200	39.8
Buldhana	92.1	20.6	4.8	25.4	121.9	239.5	779800	30.7
Akola	57.2	17.2	13.8	31.0	26.5	114.6	496000	23.1
Washim	44.9	9.2	2.0	11.1	36.3	92.3	401200	23.0
Amravati	109.2	15.2	5.7	20.9	152.8	283.0	843800	33.5
Yavatmal	163.7	14.8	14.2	29.0	72.7	265.4	1019800	26.0
Amravati Region	467.0	76.9	40.6	117.4	410.3	994.7	3561500	27.9
Wardha	105.4	37.2	0.0	37.2	59.6	202.2	514600	39.3
Nagpur	162.7	9.4	2.3	11.8	68.7	243.1	713200	34.1
Bhandra	107.4	53.7	0.0	53.7	24.3	185.4	227323	81.6
Gondia	113.1	37.3	0.2	37.5	9.6	160.2	223198	71.8
Chandrapur	80.3	69.3	0.1	69.4	17.5	167.2	644400	25.9
Gadchiroli	41.4	37.5	0.0	37.5	32.5	111.4	252300	44.1
Nagpur Region	610.1	244.4	2.7	247.0	212.3	1069.4	2684900	39.8
Maharashtra (Lakh Ha.)	47.4	8.3	7.2	15.6	31.8	94.8	225	42.0

Source: Irrigation Status Report, Local Sector Report & Report of Ground Water Survey & Agency Pune.

A. Projected Irrigation Potential of state- is as per design

B. Cropping pattern used for sanctioned project yard stick proposed for Local Sector project is 200 Ha. for 1 Mcm of water.

C. Capacity of Irrigation through Ground water is taken as 1.50 Ha. per well.

Annex 10.3

District wise Geographical Area, CCA and Water Availability

District	Area (Ha.)	Culturable Command Area (Ha.)	Average Water Availability (Mcum)	Water Availability With 75% Dependability (Mcum)	Allowable Water Use As Per Tribunal Award (Mcum)	Water Availability M3 Per Ha. of CCA	Plan Group of Water Availability
1	2	3	4	5	6	7	8
Mumbai	60300	31900	1068	1068	1068	33480	Abundant
Thane	955800	445200	16927	17783	17783	38021	Abundant
Raigad	715200	377800	16508	16509	16509	43695	Abundant
Ratnagiri	820800	571100	19643	19642	19642	34395	Abundant
Sindhudurg	520700	367300	10355	10355	10355	28192	Abundant
Konkan Region	3072800	1793300	64501	65357	65357	35968	Abundant
Nashik	1553100	1017800	7002	5464	5769	6880	Normal
Dhule & Nandurbar	1315000	686700	3036	2010	1669	4421	Normal
Jalgaon	1176500	920200	2183	1812	1445	2372	Deficit
Ahmednagar	1704800	1391200	5257	3907	4752	3779	Normal
Nashik Region	5749400	4015900	17478	13193	13635	4352	Normal
Pune	1564300	1152200	7946	6540	6111	6896	Normal
Solapur	1489500	1385500	1800	1104	1187	1299	Highly Deficit
Satara	1048000	757500	8876	7672	3801	11717	Surplus
Sangli	857200	718400	2540	2067	1027	3536	Normal
Kolhapur	768500	542700	11534	10220	3961	21253	Abundant
Pune Region	5727500	4556300	32696	27603	16087	7176	Normal
Aurangabad	1010800	856200	2588	1755	2124	3023	Normal
Jalna	771800	737500	1623	991	833	2201	Deficit
Beed	1069400	977100	2571	1359	960	2631	Deficit
Latur	715700	677700	1822	708	746	2689	Deficit
Osmanabad	756900	743900	1275	510	600	1714	Deficit
Nanded	1052800	916300	2844	1784	1528	3104	Normal
Parabhani & Hingoli	1104100	1021500	2531	1642	1411	2478	Deficit
Aurangabad Region	6481500	5930200	15254	8749	8202	2572	Deficit
Buldhana	966000	779800	1724	1500	1212	2211	Deficit
Akola & Washim	1057400	918100	1973	1614	1497	2149	Deficit
Amravati	1221000	843800	2649	1953	1411	3139	Normal
Yavatmal	1358200	1019800	3467	4615	2913	3400	Normal
Amravati Region	4602600	3561500	9813	9682	7033	2755	Deficit
Wardha	630900	514600	1593	1161	773	3096	Normal
Nagpur	989200	713200	3938	3171	3567	5522	Normal
Bhandra & Gondia	932100	560400	4358	3624	4418	7777	Normal
Chandrapur	1144300	644400	5344	4133	2714	8293	Surplus
Gadchiroli	1441400	252300	8844	7418	4150	35054	Abundant
Nagpur Region	5137900	2684900	24077	19507	15622	8968	Surplus
Maharashtra	30771700	22542100	163820	131562	125936	7267	Normal

Reference: Compiled Data

Source: Water Resources Department

District wise Area and Water Availability of Sub-basins

Sr. No.	Sub-basin	Natural Average Availability by Tribunal (MM3)	Water Allocated (MM3)	Average Annual Rainfall (mm)	Culturable Command Area (Lakh Ha.)	Average Annual Evaporation (mm)	Natural Availability (M3 Per Ha. of CCA)	Classification	Percentage of Area Within Sub-basin
1	2	3	4	5	6	7	8	9	10
Godavari Basin									
1	Upper Godavari	A. 5137 AA. 2130	A. 5137 AA. 2130	941	A11.88 AA 5.31	1991-1608	A 4324 AA 4011	Normal	Normal A'nagar, 59.08 Nashik, 47.60 A'bad, 47.30 Pune 0.62
2	Lower Godavari (Below Paithan Dam)	4778	1586	784	16.16	1961	2957	Deficit	Beed 67.06 Nanded 34.50 Parbhani 33.45 Jalna 22.85 Abad 6.08 Anagar 3.96 Latur 0.92
3	Purna including Dudhna	3316	1954	814	15.56	2041	2131	Deficit	Jalna 76.99 Parbhani 50.01 Buldhana 21.41 A'bad 6.04 Akola 0.73
4	Manjra	3770	1547	800	13.37	1985	2820	Highly Deficit	Latur 99.08 O'bad 40.63 Nanded 24.83 Beed 17.86 A'Nagar 0.77
5	Remaining Godavari	274	36	1044	0.59	2041	4644	Normal	Nanded 6.58
6	Penganga	5500	5333	1000	17.09	1878	3218	Normal	Yavatmal 73.06 Nanded, 34.09 Akola 33.17 Buldhana 20.34 Parbhani 16.54 Chandrapur 5.70
7	Wardha	5633	2733	1039	15.67	1854	3595	Normal	Wardha, 100 Chandrapur40.45 Amravati, 33.17 Nagpur 32.28 Yavatmal, 26.94 Akola, 4.46
8	Middle Waitarna	10026	10167	1250	12.09	1876	8293	Surplus	Bhandara 100 Nagpur, 67.72 Gadchiroli, 26.53 Chandrapur13.99
9	Lower Waitarna	A.6311 AA. 252 C. 3753	A.2373 AA. 28 C.1161	1326	A 3.53 AA .06 C 1.25	1710	A17878 AA 42000 C30024	Abundant	Gadchiroli 71.47 Chandrapur39.86
Godavari Basin		50880	34185		112.56		4520	Normal	
Tapi Basin									
10	Purna (Tapi)	2536	1506	767	14	2657	1811	Deficit	Akola, 61.64 Buldhana 56.90 Amravati,39.96 Jalgaon 5.79
11	Girna	1551	921	673	7.31	2630	2122	Deficit	Nashik, 35.22

Annex 10.4

Sr. No.	Sub-basin	Natural Average Availability (MM3)	Water Allocated by Tribunal (MM3)	Average Annual Rainfall (mm)	Culturable Command Area (Lakh Ha.)	Average Annual Evaporation (mm)	Natural Availability (M3 Per Ha. of CCA)	Classification	Percentage of Area Within Sub-basin
1	2	3	4	5	6	7	8	9	10
12	Panzara	529	314	785	1.7	2745	3112	Normal	Jalgaon 35.11 A'Bad 5.88 Dhule, 19.15 Jalgaon 1.46 Nashik, 0.25
13	Middle Tapi	A. 2868 AA.1634	A. 1704 AA. 970	525-704	A 7.01 AA 7.29	2013	A4091 AA2241	Normal Deficit	Dhule, 72.88 Jalgaon 57.64 A'Bad4.63 Nashik 3.54 Buldhana 1.35
Tapi Basin		9118	5415		37.31		2444	Deficit	
14	Narmada Basin	580	308	1019	0.64	1971	9063	Surplus	Dhule 7.97
Krishna Basin									
15	Upper Krishna (west)	A. 18097 AA.3227	A 7433 AA.245	1584	A 9.88 AA 1.24	1243	A18317 AA26024	Abundant	Kolhapur 97.64 Satara, 56.91 Sangli, 19.24
16	Upper Krishna (East)	A. 130 AA.87	A.65 AA.15	470-559	A 3.20 AA 1.10	1481-1833	A406 AA791	Highly Deficit	Sangli 45.79 Satara 12.97
17	Upper Bhima	7594	5997	1086	11.22	1809	6768	Normal	Pune 69.58 A'nagar, 16.85 Solapur 6.41
18	Remaining Bhima (Neera and Man)	A.2812 AA 469	A.1774 AA.186	???-576 ???-553	? 5.31 ? 9.15	1674 1627	A5296 AA513	Normal Abundant	Solapur 46.08 Sangli 34.97 Pune 28.26 Satara 3.12, O'bad 59.37
19	Sina-Bori A-Sina AA- Benetura	A 1110 AA.506	A.910 AA 193	557 AA 3.57 1553	A 11.60	1621	A957 AA1417	Highly Deficit Highly Deficit	Solapur 47.51 A'nagar 19.34, Beed 15.08,
Krishna Basin		34032	16818		56.27		6048	Normal	
Konkan West Flowing Rivers									
20	Damaganga Par	4426	4426	2198	1.52	1661	29118	Abundant	Nashik 12.12 Thane 6.38,
21	North Konkan	21369	21369	2768	5.31	1651	40243	Abundant	Thane 93.62, Raigad 31.02, Nashik 1.17 Pune 0.71
22	Middle Konkan	15116	15116	3750	3.1	1956	48761	Abundant	Raigad 68.98, Ratnagiri 10.58 Pune 0.83,
23	Vashishthi	5496	5496	3946	1.54	1698	35688	Abundant	Ratnagiri 27.2
24	South Konkan (Ratnagiri)	A. 11299 AA.7317	A. 11299 AA.7317	3498	A 3.28 AA 2.89	1274	A34448 AA25318	Abundant	Sindhudurg75.15 Ratnagiri 62.22,
25	Terekhol Tillari	4187	4187	3643	1	1716	41870	Abundant	Sindhudurg24.85 Kolhapur 2.36
Konkan West Flowing Rivers		69210	69210		18.64		37130	Abundant	
Total Maharashtra		163820	125936		225.42		7267	Normal	

Source: Water Resources Department

District wise Culturable Area, Sub-basin Area Percentage and Classification

District	Culturable Area (Lakh Ha.)	Highly Deficit	Deficit	Normal	Surplus	Abundant	General Classification
1	2	3	4	5	6	7	8
Mumbai City & Mumbai Suburb	0.3	-	-	-	-	100.0	Abundant
Thane	4.5	-	-	-	-	100.0	Abundant
Raigad	3.9	-	-	-	-	100.0	Abundant
Ratnagiri	5.8	-	-	-	-	100.0	Abundant
Sindhudurg	3.8	-	-	-	-	100.0	Abundant
Nashik	10.1	0.0	40.0	46.7		13.4	Normal
Dhule & Nandurbar	7.2	-	43.5	48.6	8.0	-	Normal
Jalgaon	9.1	-	73.2	26.8	-	-	Deficit
Ahmednagar	13.8	19.3	4.7	75.9	-	-	Normal
Pune	11.5	-	-	98.5	-	1.5	Normal
Solapur	13.9	87.9	-	12.1	-	-	Highly Deficit
Satara	7.6	26.5	-	16.6	-	56.9	Surplus
Sangli	7.2	80.8	-	-	-	19.2	Normal
Kolhapur	5.4	-	-	-	-	100.0	Abundant
Aurangabad	8.7	-	52.6	47.4	-	-	Normal
Jalna	7.5	-	100.0	-	-	-	Deficit
Beed	9.9	15.1	84.9	-	-	-	Deficit
Latur	6.9	-	100.0	-	-	-	Deficit
Osmanabad	7.6	59.4	40.6	-	-	-	Deficit
Nanded	9.3	-	59.3	40.7	-	-	Normal
Parbhani & Hingoli	9.4	-	83.5	16.5	-	-	Deficit
Buldhana	7.8	-	78.8	21.2	-	-	Deficit
Akola & Washin	9.1	-	62.4	37.6	-	-	Deficit
Amravati	8.5	-	40.0	60.0	-	-	Normal
Yavatmal	10.2	-	0.0	100.0	-	-	Normal
Wardha	5.4	-	-	100.0	-	-	Normal
Nagpur	7.3	-	-	32.3	67.7	-	Normal
Bhandara & Gondia	4.9	-	-	-	100.0	-	Surplus
Chandrapur	6.6	-	0.0	46.2	14.0	39.9	Surplus
Gadchiroli	2.7	-	-	-	26.5	73.5	Abundant
Total Maharashtra	225.4	13.0	32.0	34.0	6.0	15.0	Normal

Source: Maharashtra Water & Irrigation Commission Report

Source: Water Resources Department

Annex 10.6

Region wise Water Availability (Per Capita, Per ha.)						
Region	Area (Lakh Ha.)	Population (As in 2011)	Water Availability as per Tribunal in cum.		Water Availability in cum.	
					Per capita in cum. (col.4&3)	Per ha. of CCA (col.4&2)
1	2	3	4		5	6
Konkan (Including Greater Mumbai)	17.93	28629512	A	65357	2283	36451
			B	3501	122	1953
			C	3060	107	1707
			D	2493	87	1390
Konkan (Excluding Greater Mumbai)	17.61	16151066	A	64289	3980	36507
			B	1861	115	1057
			C	1572	97	893
			D	1143	71	649
Only Greater Mumbai	0.32	12478447	B	1640	131	51250
			C	1488	119	46500
			D	1350	108	42188
Nashik	40.16	18571535	A	13635	734	3395
			B	4473	241	1114
			C	3574	192	890
			D	3259	175	812
Pune	45.56	23440998	A	16087	686	3531
			B	10228	436	2245
			C	8800	375	1932
			D	8182	349	1796
Aurangabad	59.30	18727748	A	8202	438	1383
			B	7508	401	1266
			C	6268	335	1057
			D	4269	228	720
Amravati	35.62	11266653	A	7033	624	1974
			B	2969	264	834
			C	2652	235	745
			D	1723	153	484
Nagpur	26.85	11736526	A	15622	1331	5818
			B	4706	401	1753
			C	2955	252	1101
			D	2210	188	823
Maharashtra	225.42	112372972	A	125936	1121	5587
			B	33385	297	1481
			C	27309	243	1211
			D	22112	197	981

Ref: Consolidated information.

A) Water availability as per Tribunal

B) Designed water storage(availability) as in 2010

C) Water availability as per actual Storage in 2010

D) Actual average water availability in last 10 years

Source: Water Resources Department

**Development of Irrigation Year wise, Region wise, Created Irrigation Potential and
Water Storage (Area: Lakh Ha., Water Storage: Mcum)
(State Sector Projects)**

Region	Item	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1	2	3	4	5	6	7	8	9	10	11	12
Konkan	Potential Created	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.9	0.9	1
	Water Storage Built-up	2689	2742	2742	2764	2887	2620	2717	3279	3392	3501
	Actual Irrigation	0.15	0.15	0.15	0.16	0.17	0.22	0.21	0.19	0.16	0.11
	Actual water Storage	2222	2414	2063	2119	2356	2488	2525	3007	2676	3060
Nashik	Potential Created	6.5	6.6	6.6	6.6	6.7	6.8	7.2	7.4	9.5	9.7
	Water Storage Built-up	3705	3750	3803	3785	3785	4081	3905	4170	4377	4474
	Actual Irrigation	1.68	1.86	2.01	2.19	2.49	2.34	2.53	2.22	2.26	2.13
	Actual water Storage	2618	2999	2933	3334	3388	3811	3486	3722	2723	3574
Pune	Potential Created	13.8	13.9	14.3	14.6	15.1	15.6	16.3	16.6	15.1	15.4
	Water Storage Built-up	9655	9710	9735	9797	9654	10109	9329	10973	10762	10228
	Actual Irrigation	5.7	5.96	5.21	6.63	6.8	8.68	9.1	9.72	9.59	9
	Actual water Storage	6526	6236	5164	8112	9131	9646	8909	10309	8984	8800
Marathwada	Potential Created	8.5	8.6	8.6	8.7	8.8	9.1	9.5	9.8	10.2	10.5
	Water Storage Built-up	8985	6766	6774	6686	6819	6809	7094	7003	7097	7507
	Actual Irrigation	1.31	1.22	1.09	1.14	2.72	2.79	2.82	2.99	1.27	2.76
	Actual water Storage	3506	3307	2251	2942	5394	6204	5511	5309	2000	6268
Amravati	Potential Created	3.4	3.5	3.5	3.6	3.8	3.9	4.1	4.3	4.6	4.7
	Water Storage Built-up	2319	2333	2352	2421	2514	2458	2590	2971	2889	2969
	Actual Irrigation	0.84	1.14	0.89	0.32	0.82	1.14	1.12	0.6	0.51	1.24
	Actual water Storage	1588	1944	1644	812	1747	2342	2144	1214	1142	2652
Nagpur	Potential Created	4.8	4.8	4.8	4.8	4.8	5.1	5.4	5.8	6	6.1
	Water Storage Built-up	3535	3415	3434	3436	3452	3454	3482	4674	4694	4705
	Actual Irrigation	2.82	2.85	3.09	2.13	3.17	3.18	3.19	2.53	2.76	3.17
	Actual water Storage	1580	2036	2886	980	2845	2819	2914	1241	1840	2955
Maharashtra	Potential Created	37.7	38.1	38.6	39.1	40	41.3	43.3	44.8	46.3	47.4
	Water Storage Built-up	28062	28716	28840	28889	29111	29531	29117	33070	33211	33384
	Actual Irrigation	12.5	13.18	12.44	12.57	16.17	18.35	18.97	18.25	1656	18.41
	Actual Water Storage	17817	18936	16941	18299	24861	27310	25489	24802	19365	27309

Consolidated information Irrigation Status Report Government of Maharashtra

Information State Sector Projects is given, Local Sector Projects information is not Available

Note: 1) In Irrigation Status Report 2008 & 2009, Water storage of Pune region was shown incorrect. However these figures have been corrected in status report of 2010.

2) Water Storage is consistently increasing in last 10 years. However the water storage of Pune region for the above shown 2 years is reduced. This needs to be verified.

Source: Water Resources Department

Annex 10.8

Region wise CCA and Water Storage					
Region	CCA (Lakh Ha.)	Designed Water Storage (Mcum)			
		State Sector	Local Sector	Ground Water GSDA	Total
1	2	3	4	5	6
Konkan	17.9	3501	431	1953	5885
Nashik	40.2	4474	3111	5900	13485
Pune	45.6	10228	1915	7155	19298
Rest of Maharashtra	103.7	18203	5457	15018	38678
Aurangabad	59.3	7507	2279	9092	11371
Marathwada	59.3	7507	2279	9092	11371
Amravati	35.6	2969	781	4218	7968
Nagpur	26.9	4705	648	5481	10834
Vidarbha	62.5	7674	1329	9697	18700
Maharashtra	225.4	33385	9165	33806	76356

Source: Water Resources Department

Available Water Storage and Water Use (2000-01 to 2011-12)
(State Sector Projects)

(Mcum)

Year	Designed Storage	Water Storage on 15/10	Percentage of Live Storage with Designed Storage	Evapo- ration	Irrigation Water Use	Percentage of Irrigation Water Use	Non- Irrigation and Other Water Use	Percentage of Non- Irrigation Water Use	Total Water Use	Percentage of Water Use w.r.t. Water Storage on 15/10
1	2	3	4	5	6	7	8	9	10	11
2000-01	26748	18947	71	-	13575	71.7	3858	20.4	17433	92.0
2001-02	28062	17817	63	-	12346	69.3	3980	22.3	16326	91.6
2002-03	28715	18936	66	-	12965	68.5	4236	22.4	17201	90.8
2003-04	28840	16941	59	-	10569	62.4	4790	28.3	15359	90.7
2004-05	28889	18298	63	-	10603	58.0	4860	26.6	15463	84.5
2005-06	29110	24860	85	-	13689	55.1	4926	19.8	18616	74.9
2006-07	29531	27309	92	4481	16630	60.9	4294	15.7	25405	93.0
2007-08	29116	25489	88	4481	16413	64.4	5541	21.7	26435	103.7
2008-09	33071	24803	75	4074	18486	74.5	6880	27.7	25366	102.3
2009-10	33211	19366	58	3972	12113	62.6	4763	24.6	20848	107.7
2010-11	33385	27309	82	5383	15447	56.6	5876	21.5	26706	97.8
2011-12	34119	26989	79	5298	18617	69.0	6693	24.8	30608	113.4
Average	30233	22255	74	4614	14287	64.2	5058	22.7	24952	112.1

Ref: Irrigation Status Report

Note: Water use in the year 2007-08, 08-09, 09-10, 11-12 is more than the water storage on 15/10 due to availability of water because of non utilization in Kharif and post monsoon inflow.

Source: Water Resources Department

Annex 10.10

Region wise Water Users' Associations
(State Sector Projects)

Region	Created Irrigation Potential (Lakh ha.)	Co-op. Act 1960/Act 2005	Active Water Users' Association	Handed Over Area in lakh ha.
1	2	3	4	5
Konkan	1.0	1960	2	0.0
		2005	48	0.1
Nashik	9.7	1960	250	0.8
		2005	431	1.6
Pune	15.4	1960	332	0.7
		2005	473	2.5
Marathwada	10.5	1960	474	2.2
		2005	99	0.5
Amravati	4.7	1960	285	0.9
		2005	147	0.5
Nagpur	6.1	1960	69	0.3
		2005	361	1.5
Maharashtra	47.4	1960	1412	4.9
		2005	1559	6.8

(Transfer of Land to WUA by Divisions)

Source: Water Resources Department

District wise Number of Watershed Segments						
Sr. No.	District	Identified Number of Watersheds	Number of Watershed Developments Work started	Number of Completed Watershed Development Works	Number of Incomplete Watershed Development Work	Number of Watershed Development Works Yet Not Started
1	2	3	4	5	6	7
1	Thane	571	507	117	390	64
2	Raigad	496	342	70	272	154
3	Ratnagiri	810	466	261	205	344
4	Sindhudurg	520	261	255	6	259
	A-Konkan	2397	1576	703	873	821
5	Nashik	1474	1421	789	632	53
6	Dhule	664	623	189	434	41
7	Nandurbar	411	272	112	160	139
8	Jalgaon	893	893	508	385	0
9	Ahmednagar	3407	2559	334	2225	848
	B-Nashik	6849	5768	1932	3836	1081
10	Pune	2046	1713	434	1279	333
11	Solapur	3407	2559	334	2225	848
12	Kolhapur	853	821	219	602	32
13	Sangli	789	567	123	444	222
14	Satara	1408	932	368	564	476
	C-Pune	8503	6592	1478	5114	1911
15	Aurangabad	532	463	243	220	69
16	Jalna	1445	1332	582	770	93
17	Beed	1026	818	308	810	208
18	Parbhani	662	406	265	141	256
19	Hingoli	559	379	228	151	180
20	Nanded	739	649	192	457	90
21	Osmanabad	1471	1401	1104	297	70
22	Latur	1256	1045	371	674	211
	D-Aurangabad	7690	6513	3293	3220	1177
23	Amaravati	1416	1016	382	634	400
24	Yavatmal	983	744	524	220	239
25	Buldhana	950	230	182	48	720
26	Akola	705	569	273	296	136
27	Washim	756	704	535	169	52
	E-Amaravati	4810	3263	1896	1367	1547
28	Nagpur	614	601	428	173	13
29	Bhandara	643	315	166	149	328
30	Wardha	480	471	294	177	9
31	Chandrapur	1586	1143	712	431	443
32	Gadchiroli	909	642	334	308	267
33	Gondia	260	260	127	133	0
	F-Nagpur	4492	3432	2061	1371	1060
	Maharashtra	34143	27016	11629	15387	7127
	Geological Area	307.70 Lakh Ha.	Total Watershed Area 240.85 Lakh Ha.	Work Done Watershed Area 125.60 Lakh Ha.	Balance Watershed Area 115.35 Lakh Ha.	

Source: Water Resources Department

Annex 10.12

Revenue Division wise Funds Required for Deficit Removal of Watershed Development

Sr. No.	Revenue Divisions	Geographic Area (lakh ha)	Area Available for Watershed Development (lakh ha)	Developed Area (lakh ha)	A-For Deficit Removal				Funds required for Deficit Removal (As per Rs. 25000 per ha rate (Rs. In Crore)
					Percentage of Developed Area	Deficit w.r.t. Percentage of State (52-Col.6)	Deficit Area for Watershed Development (Lakh ha)		
1	2	3	4	5	6	7	8	9	
1	Konkan	30.7	24.8	14.1	57	0	0.0	0	
2	Nashik	57.5	27.2	13.2	48	4	1.1	273	
3	Pune	57.3	59.7	34.8	58	0	0.0	0	
A	Rest of Maharashtra	145.5	111.8	62.1	56	0	0.0	273	
4	Aurangabad	64.8	48.9	29.3	59	0	0.0	0	
B	Marathwada	64.8	49.9	29.3	59	0	0.0	0	
5	Amravati	46.0	41.2	14.5	35	17	7.0	1753	
6	Nagpur	51.4	38.0	19.6	52	0	0.0	0	
C	Vidarbha	97.4	79.2	34.1	43	9	7.1	1753	
	Maharashtra	307.7	240.8	125.5	52	0	0.0	2026	

Ref: 1) Information in Col.3 and Col.4 is supplied by Agricultural Department.

2) For Watershed Development works Rs. 25000 per ha rate is considered approximately.

Source: Water Resources Department

District wise Available Ground Water Status of State (2008-09)

Water Utilisation: MCum, Area: Ha.

District	Area Under Ground Water Availability	Ground Water Availability	Water Utilised for Irrigation by Ground Water	Water Utilised for Residential Purpose	Total water Utilisation for Irrigation & Non-irrigation by Ground Water	Percentage of Available Ground Water (Col. No. 6 to Col. No.3)	Balance Ground Water	Number of Possible Wells
1	2	3	4	5	6	7	8	9
Thane	509533	673	63	13	76	9	395	13175
Raigad	374759	562	47	21	67	8	326	10859
Ratnagiri	511307	466	40	12	52	9	274	9125
Sindhudurg	279306	262	54	18	73	21	111	3691
Konkan	1674905	1963	205	64	269	14	1105	36850
Nashik	1348856	2084	993	35	1028	48	536	31292
Dhule	642132	1188	560	18	578	47	253	16887
Nandurbar	415278	727	249	24	273	34	236	15721
Jalgaon	1137883	1348	896	47	944	67	105	7030
Ahmednagar	1562475	1808	1409	34	1443	78	62	4147
Nashik	5106624	7155	4107	158	4266	60	1192	75077
Pune	1275728	1663	1118	71	1189	67	160	10650
Solapur	1483890	1508	1130	49	1180	75	38	2522
Kolhapur	562176	782	445	13	459	57	104	6927
Sangli	842758	891	656	28	684	74	21	1392
Satara	877507	1056	687	47	734	65	60	4000
Pune	5042059	5900	4036	208	4246	72	383	25491
Aurangabad	950174	1192	701	38	739	59	117	7812
Jalna	771800	951	443	9	452	47	214	14270
Beed	1035205	1344	638	48	685	47	256	17045
Parbhani	621400	883	280	13	294	32	324	21598
Hingoli	466241	1030	362	18	380	35	341	22729
Nanded	1017771	1387	392	27	418	28	552	36832
Osmanabad	671628	1110	718	19	737	65	90	6011
Latur	663548	1195	916	21	937	77	33	2218
Aurangabad	6197767	9092	4451	191	4642	51	1928	128515
Amaravati	839239	932	764	29	793	82	78	5227
Yavatmal	1144067	1362	364	57	421	27	532	35475
Buldhana	820615	917	610	32	642	67	55	3658
Akola	514165	448	132	12	145	30	169	11273
Washim	481196	559	182	19	200	33	191	12726
Amaravati	3799282	4218	2052	149	2201	52	1025	68359
Nagpur	799042	1058	344	64	408	32	342	22786
Bhandara	396497	506	121	20	141	24	213	14205
Wardha	581216	1019	298	36	334	29	379	25277
Chandrapur	1047657	1030	88	63	150	9	570	38020
Gadchiroli	886649	1281	163	22	184	13	712	47484
Gondia	459705	587	48	61	109	8	302	20119
Nagpur	4170766	5481	1062	266	1326	24	2518	167891
Maharashtra	25991403	33806	15913	1036	16997	50	8152	502182

Source: Report of Ground Water Survey & Development Agency Pune

Source: Water Resources Department

Annex 10.14

Deficit in Water Supply for Rural Area (40 litre per capita)									
Region	Rural Population (2011)	Present Water Requirement (40 litre per capita per day)		Present Water Supply		Deficit %	Probable Demand in 2030		Established Regional Water Supply Schemes(MLD)
		MLD	Mcum	MLD	Mcum		MLD	Mcum	
1	2	3	4	5	6	7	8	9	10
Konkan	15680383	627	228.9	486	177.4	22.5	828	302	95.1
Pune	12838634	514	187.5	372	135.9	27.5	678	247	525.8
Nashik	10171629	407	148.5	275	100.2	32.5	537	196	421.1
Marathwada	10257187	410	149.8	297	108.6	27.5	542	198	311.6
Amravati	6170746	247	90.1	216	78.8	12.5	326	119	252.1
Nagpur	6428095	257	93.9	193	70.4	25.0	339	124	244.0
Total	61546674	2462	898.6	1839	671.4	25.3	3250	1186	1849.5

Source: Note by Maharashtra Jeevan Pradhikaran dated 17Feb 2013

Source: Note by Maharashtra Jeevan Pradhikaran dated 17 Feb 2013

Water Supply Requirements (Rural) at 70/140 litres per capita per day										
Region	Rural Population (2011)	Present Water Requirement (70 litre per capita per day)		Present Water Requirement (140 litre per capita per day)		Probable Demand in 2030 (70 litre)		Probable Demand in 2030 (140 litre)		
		MLD	Mcum	MLD	Mcum	MLD	Mcum	MLD	Mcum	
1	2	3	4	5	6	7	8	9	10	
Konkan	15680383	1098	401	2195	801	1449	529	2898	1058	
Pune	12838634	899	328	1798	656	1186	433	2373	866	
Nashik	10171629	712	260	1424	520	940	343	1880	686	
Marathwada	10257187	718	262	1436	524	948	346	1896	692	
Amravati	6170746	432	158	864	315	570	208	1140	416	
Nagpur	6428095	450	164	900	328	594	217	1188	434	
Total	61546674	4308	1573	8617	3145	5687	2076	11374	4151	

Ref: MJP Note dated 17/02/2013

Source: Water Resources Department

Note: Next Annex is 10.17

Region wise Status of Water Supply Schemes									
Region	No. of Proposed Water Supply Schemes	No. of Sanctioned Schemes	Status of Schemes			Scheme of Recycle of Water in Existence or not	Status of Recycle Scheme	Whether Resurvey of Recycle Scheme Done	9
			Functioning Schemes	Schemes in Progress	Non- Functioning Schemes				
1	2	3	4	5	6	7	8		
Konkan	26	26	19	7	-	-	-	-	-
Pune	36	36	16	11	9	-	-	-	-
Nashik	45	45	45	-	-	-	-	-	-
Marathwada	55	55	47	7	1	2 -Proposed 1-Non-functioning,	1 - Functioning	1	1
Amravati	33	33	33	-	-	-	-	-	-
Nagpur	28	28	19	9	-	1 -Proposed	1 Functioning	-	-
Total	223	223	179	34	10	3	2 Functioning, 1-Non-functioning	1	1

Ref : Water Pollution Control Board (GoM)

District wise Backlog (State Sector Projects)					
Sr. No.	District	Irrigation Potential Created by June 2010 (Lakh ha.)	Percentage of Irrigation Potential	Hactorage of Backlog (Lakh ha.)	Financial Potetion in Crore (Rs. 3 Lakh Per ha.)
1	2	3	4	5	6
1	Thane	0.5	10.4	47.5	1424
2	Raigad	0.2	5.6	58.3	1748
3	Ratnagiri	0.2	3.0	102.7	3080
4	Sindhudurg	0.1	3.7	63.5	1906
	Konkan Region	1.0	5.5	271.9	8158
5	Nashik	2.1	20.8	2.5	76
6	Dhule	1.0	23.8	0.0	0
7	Nandurbar	0.9	34.2	0.0	0
8	Jalgaon	2.2	23.6	0.0	0
9	Ahmednagar	3.5	25.3	0.0	0
	Nashik Region	9.7	24.1	2.5	76
10	Pune	4.0	34.3	0.0	0
11	Solapur	3.8	27.1	0.0	0
12	Satara	2.0	27.0	0.0	0
13	Sangli	2.6	35.8	0.0	0
14	Kolhapur	3.1	57.0	0.0	0
	Pune Region	15.4	33.8	0.0	0
A	Rest of Maharashtra	26.1	63.5	274.4	8233
15	Aurangabad	1.3	15.4	48.0	1441
16	Jalna	0.9	12.1	65.5	1966
17	Beed	1.8	17.9	30.1	904
18	Latur	1.1	16.7	29.2	877
19	Osmanabad	1.2	15.9	38.0	1139
20	Nanded	2.0	21.6	0.0	0
21	Parabhani	1.7	34.1	0.0	0
22	Hingoli	0.5	10.1	56.1	1683
	Aurangabad Region	10.5	17.7	267.0	8010
B	Marathwada	10.5	17.7	267.0	8010
23	Buldhana	0.9	11.8	71.8	2154
24	Akola	0.6	11.5	47.3	1419
25	Washim	0.5	10.6	43.8	1315
26	Amravati	1.1	13.0	68.1	2042
27	Yavatmal	1.6	16.1	50.6	1518
	Amravati Region	4.7	13.1	281.6	8447
28	Waradha	1.1	20.5	2.8	83
29	Nagpur	0.8	12.5	55.2	1655
30	Bhandra	0.4	16.4	11.7	349
31	Gondia	1.6	22.8	0.0	0
32	Chandrapur	1.1	34.1	0.0	0
33	Gadchiroli	1.1	47.2	0.0	0
	Nagpur Region	6.1	22.7	69.6	2087
C	Vidarbha	10.8	17.2	351.2	10534
	Maharashtra	47.4	21.0	892.6	26778
				Say	26778

Source: Water Resources Department

The Meaning of Specific Words and Terms Used in the Report

1	Irrigation Potential: The cropped area that can be irrigated by the available project water
2	Created Irrigation Potential: The cropped area that can be irrigated by the water in the completed projects
3	Projected Designed Irrigation Potential: The cropped area that can be irrigated by the developed water storage (designed) of the project
4	Actual Irrigated area: The culturable area or the cropped area that is actually irrigated by the available water as defined in that context.
5	1 cum.=1cubic metre = 1000 litre
6	1 mcum. of water storage=1 million cubic metre of water storage
7	Average water storage: The annual average available water storage for a particular period
8	75% Dependability: It is the water available every year, arranged in descending order and 75% of it is taken.
9	Projected Natural Water Availability
	A) For project creation the water available from the catchment area
	B) The ground water availability as projected by the G.S.D.A.
	C) Water availability from village tanks, Farmponds, and due to water shed development .
10	Developed Ground water availability: 1.5 ha.per well and 1500 cum. per ha.
11	Culturable Command Area: It is the area for cultivation excluding forest land, barren land, rivers, nallas, tanks etc. and the land in other use
12	Region means geographical area of the region (Rest of Maharashtra, Marathwada, Vidarbha etc.)
13	Revenue Division means the Regions for administrative control
14	Area means the specific things shown under geographical aea
15	Basin means geographical area from which the water is flown into the river
16	Developmental Deficit means the items of developments lagging behind due to some reasons

Source: Water Resources Sub-group

District wise Abstract of Annexure

District	Population	Geographical Area (Ha.)	Culturable Command Area (Ha.)	Cropped Area (Ha.)	Created Irrigation Potential (Lakh Ha.)	Total Water Resource Conservation	Average Water Availability (Mcum)	75% Dependability of Water Availability (Mcum)	Allowable Water Availability As Per Arbitration	Region wise created Water Availability (Mcum)	Total		
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Mumbai	3145966	60	31900	-	-	-	-	1068	1068	1068	-	-	-
Mumbai	9332481												
Thane	11054131	956	445200	363191	46.1	16.3	62.4	16927	17783	17783			
Raigad	2635394	715	377800	202841	21.1	10.7	31.8	16508	16509	16509			
Ratnagiri	1612672	821	571100	274405	17.4	11.1	28.4	19643	19642	19642			
Sindhudurg	848868	521	367300	144560	13.7	19.8	33.5	10355	10355	10355			
Konkan	28629512	3073	1793300	984997	98.2	57.9	156.1	64501	65357	65357	3501	431	3932
Nashik	6109052	1553	1017800	771538	211.4	97.2	308.6	7002	5464	5769			
Dhule	2048781	806	437600	310053	104.3	53.3	157.6	3036	2010	1669			
Nandurbar	1646177	503	311900	287139	85.2	41.7	126.9						
Jalgaon	4224442	1177	920200	790248	216.8	48.9	265.7	2183	1812	1445			
Ahmednagar	4543083	1705	1391200	1245259	351.7	157.5	509.2	5257	3907	4752			
Nashik	18571535	5750	4015900	3404237	969.4	398.5	1367.9	17478	13193	13635	4474	3111	7585
Pune	9426959	1564	1152200	991782	394.6	67.9	462.6	7946	6540	6111			
Solapur	4315527	1490	1385500	1126011	376.0	72.7	448.7	1800	1104	1187			
Satara	3003922	1048	757500	557603	204.5	45.1	249.5	8876	7672	3801			
Sangli	2820575	857	718400	637707	257.3	32.5	289.9	2540	2067	1027			
Kolhapur	3874015	769	542700	447764	309.3	91.7	401.0	11534	10220	3961			
Pune	23440998	5728	4556300	3760867	1541.7	309.9	1851.6	32696	27603	16087	10288	1915	12203
Rest of Maharashtra	70642045	145.5	103.7	8150101	26.1	7.7	33.8	114675	93624	95079	18203	5457	23660
Aurangabad	3695928	1011	856200	715055	131.9	89.9	221.7	2588	1755	2124			
Jalna	1958483	772	737500	603038	89.5	70.5	159.9	1623	991	833			
Beed	2585962	1069	977100	883825	175.2	8.3	183.5	2571	1359	960			
Latur	2455543	716	677700	610379	113.2	8.9	122.0	1822	708	746			
Osmanabad	1660311	757	743900	623920	118.3	87.2	205.5	1275	510	600			

Annex 10.20

District	Population	Geogra- phical Area (Ha.)	Culturable Command Area (Ha.)	Cropped Area (Ha.)	Created Irrigation Potential (Lakh Ha.)	Total Water Resource Conservation	Average Water Availa- bility (Mcum)	75% Dependa- bility of Water Availability (Mcum)	Allowable Water Availability As Per Arbi- tration	Region wise created Water Availability (Mcum)	Total		
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Nanded	3356566	1053	916300	719057	197.9	24.8	222.7	2844	1784	1528			
Parbhani	1835982	651	507100	485953	172.7	78.5	251.2	2531	1642	1411			
Hingoli	1178973	453	404593	396570	51.9	57.0	108.9						
Marathawada	18727748	64.82	5930200	5037797	1050.5	424.9	1475.4	15254	8749	8202	7507	2279	9786
Buldhana	2588039	966	779800	582064	92.1	25.4	117.5	1724	1500	1212			
Akola	1818617	543	496000	435725	57.2	31.0	88.1	1973	1614	1497			
Washim	1196714	515	401200	339281	44.9	11.1	56.0						
Amravati	2887826	1221	843800	753318	109.2	20.9	130.2	2649	1953	1411			
Yavatmal	2775457	1358	1019800	803787	163.7	29.0	192.7	3467	4615	2913			
Amravati	11266653	4602	3561500	2914175	467.0	117.4	584.5	9813	9682	7033	2969	781	3750
Wardha	1296157	631	514600	356384	105.4	37.2	142.6	1593	1161	773			
Nagpur	4653171	986	713200	497511	162.7	11.8	174.4	3938	3171	3567			
Bhandara	1198810	389	227323	151358	107.4	53.7	161.1	4358	3624	4418			
Gondia	1322331	543	223198	173959	113.1	37.5	150.6						
Chandrapur	2194262	1144	644400	412919	80.3	69.4	149.7	5344	4133	2714			
Gadchiroli	1071795	1441	252300	147773	41.4	37.5	78.8	8844	7418	4150			
Nagpur	11736526	5134	2684900	1739904	610.1	247.0	857.1	24077	19507	15622	4705	648	5353
Vidarbha	23003179	97.36	62.47	4654079	1077.1	364.5	1441.6	33890	28028	22655	7674	1329	9003
Maharashtra	112372972	307.7	225.42	178.42	47.4	15.6	62.9	163820	131562	125936	33385	9165	42550

Source: Water Resources Department

Region wise Created Irrigation Potential (Thousand Ha.)								
Region	Potential of State Sector Projects	Potential of Local Sector Projects (Direct)	Potential of Local Sector Projects (in direct)	Total Potential of Local Sector Projects (Col. 3+4)	Potential Through Ground Water	Total (2+5+6)	CCA (Lakh Ha.)	Percentage (see Column 7 & 8)
1	2	3	4	5	6	7	8	9
Konkan	98.2	51.6	6.3	57.9	40.9	197.0	1793300	11.0
Nashik	969.4	151.0	247.6	398.5	821.7	2189.6	4015900	54.5
Pune	1541.7	155.3	154.6	309.9	807.2	2658.9	4556300	58.3
Marathwada	1050.5	153.2	271.7	424.9	890.2	2365.7	5930200	39.8
Amravati	467.0	76.9	40.6	117.4	410.3	994.7	3561500	27.9
Nagpur	610.1	244.4	2.7	247.0	212.3	1069.4	2684900	39.8
Maharashtra (Lakh Ha.)	47.4	8.3	7.2	15.6	31.8	94.8	225.42	42.0

Source: Irrigation Status Report, Local Sector Report, GSDA Report

A: Potential of State Sector projects is as per the approved designed crop pattern

B: The Local Sector potential is considered as 2000 Ha per Mcum

C: The Ground water potential is considered as 1.5 Ha. per well

Annex 10.22

Region wise Information									
(Water Storage in Mcum, Area: Lakh Ha.)									
Item	Konkan	Pune	Nashik	RoM	Marath -wada	Amravati	Nagpur	Vidarbha	Maha- rashtra
1	2	3	4	5	6	7	8	9	10
Geographical Area	3073	5728	5750	14551	6482	4602	5134	9736	30769
Geographical Area	3073	5728	5750	14551	6482	4602	5134	9736	30769
CCA	17.93	45.56	40.16	103.65	59.30	35.62	26.85	62.47	225.42
Population (2011)	2.86	2.34	1.86	7.06	1.87	1.13	1.17	2.30	11.24
Av. Water availability	64501	32696	17478	114675	15254	9813	24077	33890	163820
Av. Water availability with 75 % dependability	65357	27603	13193	93624	8749	9682	18346	28028	131562
Av. Water availability with 50 % dependability	65357	16223	33942	115125	10758	11905	23986	35891	161774
Water availability as per Tribunal	65357	16087	13635	95079	8202	7033	15622	22655	125936
Water availability Category-wise	Surplus	Normal	Normal		Deficit	Deficit	Abundant		Normal
Average water Storage From 2001 to 2010	2493	8182	3259	13934	4269	1723	2210	3933	22112
Water Storage built up as upto 2010	3501	10228	4474	18203	7507	2969	4705	7674	33385
Water availability through Local Sector Projects	431	3111	1915	5457	2279	781	648	1329	9165
Minimum Rainfall	1892	355	440		499	662	872		355
Maximum Rainfall	5787	3633	3442		1898	1605	1666		5787
Minimum Evaporation	1478	1510	1757		1774	1880	1695		1510
Maximum Evaporation	1734	1793	2472		2032	2416	1876		2472
Ground water availability	1963	5900	7155	15018	9092	4218	5481	9699	33806
No. of wells	36850	25491	75077	137418	128515	68359	167891	236250	502183
Area under well irrigation (1.5 ha./well)	40924	821646	807220	1669790	890224	410284	21231	622604	31822620
Total present Cropped area in lakh ha.	15	35	30	80	40	30	20	50	170
Created irrigation potential in lakh ha.	1.0	15.4	9.7	26.1	10.5	4.7	6.1	10.8	47.4
Created irrigation potential in lakh ha. through Local Sector as in 2011	0.58	3.10	3.99	7.66	4.25	1.17	2.47	3.64	15.56
No. of Projects(Water Resources Dept.)	193	839	594	1626	1064	415	470	885	3575
No. of Projects(Local Sector Dept.)	4095	4553	5667	14305	3448	1364	8811	10175	27928
Hydro power generation in Megawatt	483.95	1764.87	348.50	2507.32	36.75	2.25	53.00	55.25	3578.83

Source: Water Resources Sub-group

Region wise Geographical Area, CCA and Water Availability							
Region	Area in Th. Ha.	CCA	Average Water Availability	Water Availability with 75% Dependability	Water Availability as per Tribunal	Water Availability per Ha. of CCA (col.4&3)	Category-wise Water Availability
1	2	3	4	5	6	7	8
Konkan	3073	1793300	64501	65357	65357	35968	Surplus
Nashik	5750	4015900	17478	13193	13635	4352	Normal
Pune	5728	4556300	32696	27603	16087	7176	Normal
Aurangabad	6482	5930200	15254	8749	8202	2572	Deficit
Amravati	4602	3561500	9813	9682	7033	2755	Deficit
Nagpur	5134	2684900	24077	19507	15622	8968	Abundant
Maharashtra	30769	22542100	163820	131562	125936	7267	Normal

Source: Water Resources Sub-group

Annex 10.24

Pattern of Crop Area Under Irrigation											
Region	Jowar	Wheat	Ground - nut	Gram	Paddy	Oil seeds	Sugar -cane	Cotton	Horti -culture Crops	Others	Total
1	2	3	4	5	6	7	8	9	10	11	12
Canal	0.0	1.8	0.3	0.1	3.3	0.0	0.1	0.0	0.9	3.7	10.2
Well	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9
Rivers & Nallas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.8	1.0
Konkan	0.0	1.9	0.4	0.1	3.3	0.0	0.1	0.0	1.1	5.3	12.1
Canal	6.2	45.7	9.9	25.6	1.3	0.8	15.9	24.3	11.9	39.0	180.5
Well	34.8	54.5	8.7	29.2	2.4	9.8	22.9	41.0	30.1	81.8	315.1
Rivers & Nallas	2.6	9.6	0.2	7.4	0.1	0.8	1.0	2.8	1.8	6.2	32.4
Nashik	43.5	109.8	18.8	62.2	3.8	11.4	39.7	68.0	43.7	127.0	527.9
Canal	89.5	99.5	13.1	22.4	59.5	12.4	161.6	1.3	5.8	236.8	698.7
Well	96.8	78.0	15.3	26.6	1.6	5.7	124.4	0.2	6.7	208.1	563.3
Rivers & Nallas	20.7	27.5	2.8	7.6	15.0	13.5	68.7	0.0	1.1	44.2	201.0
Pune	206.9	205.1	31.2	56.6	76.1	31.6	354.6	1.5	13.6	489.0	1463.0
Canal	31.7	58.5	28.8	11.6	0.0	3.8	37.2	41.0	3.2	26.7	242.5
Well	20.7	34.1	4.8	9.8	0.0	1.4	26.8	30.3	5.1	25.6	158.6
Rivers & Nallas	2.7	10.8	2.2	1.6	0.0	0.2	7.5	5.5	0.3	3.0	33.6
Marathwada	55.1	103.4	35.7	23.0	0.0	5.3	71.5	76.8	8.6	55.3	434.7
Canal	2.2	57.8	6.8	6.5	0.0	0.4	0.4	16.4	5.4	6.5	102.2
Well	0.5	23.5	1.6	12.7	0.0	0.2	0.6	11.4	4.0	5.2	59.7
Rivers & Nallas	0.0	8.7	1.3	2.7	0.0	0.2	0.2	7.1	0.3	1.0	21.4
Amravati	2.7	90.0	9.7	21.8	0.0	0.8	1.2	35.0	9.6	12.6	183.4
Canal	1.1	39.4	9.4	8.9	234.6	1.5	0.5	6.1	0.7	2.8	305.3
Well	0.1	6.9	0.0	3.9	1.4	0.0	0.2	2.3	1.1	0.6	16.4
Rivers & Nallas	0.1	5.6	0.1	2.4	1.9	0.2	0.4	0.7	0.2	0.4	11.9
Nagpur	1.2	51.8	9.5	15.2	237.9	1.7	1.1	9.1	2.0	3.8	333.6
Maharashtra	309.5	561.8	105.2	178.9	321.2	50.7	468.3	190.3	78.5	693.0	2954.7

Source: Irrigation Status Report 2010-11.

Revenue Division wise Funds Required for Deficit Removal of Ground Water Development

(Water Availability: Mcum, Area: Ha.)

Sr. No.	Revenue Divisions	Area Feasible for Ground Water	Availability of Ground Water	Ground Water Available for Use	Irrigation Use from Ground Water	Non -Irrigation Use from Ground Water	Total use Irrigation + Non-Irrigation (Col.6 + Col.7)	A - Deficit Removal					Funds Required for Wells (Rs. Crore)
								Percentage of Total Use to Available Ground Water for Use	Difference in Percentage w.r.t. State's Percentage (72-Col.9)	Deficit of Ground Water in Mcum (Col.10/100)	Wells to be Dug from the Ground Water (As per foot note no. 2, 3 & 4)		
1	2	3	4	5	6	7	8	9	10	11	12	13	
1	Konkan	1674905	1963	1374	205	64	269	20	52	714	23816	357	
2	Nashik	5106624	7155	5009	4107	158	4266	85	0	0	0	0	
3	Pune	5042059	5900	4130	4036	208	4246	103	0	0	0	0	
A	Rest of Maharashtra	11823591	15018	10513	8348	430	8781	84	-	714	23816	357	
4	Marathwada	6197767	9092	6364	4451	191	4642	73	0	0	0	0	
B	Marathwada	6197767	9092	6364	4451	191	4642	73	0	0	0	0	
5	Amravati	3799282	4218	2953	2052	149	2201	75	0	0	0	0	
6	Nagpur	4170766	5481	3837	1062	266	1326	35	37	1420	177461	2662	
C	Vidarbha	7970048	9699	6789	3114	415	3527	52		1420	177461	2662	
	Maharashtra	25991406	33809	23666	15913	1036	16950	72	0	2134	201277	3019	

Source: Report of Ground Water Surveys and Development Agency 2008-09

Annex 10.26

Per Capita Per Day Water Requirement for Rural Area								
Region	Urban Population (2011)	Water Requirement in 2011 (150 litre per capita per day)		Present Water Supply		Deficit %	Probable Demand in 2030	
		MLD	Mcum	MLD	Mcum		MLD	Mcum
1	2	3	4	5	6	7	8	9
Konkan	12949129	2285	834	1384	505.1	39.5	2979	1087
Pune	10602364	1871	683	1494	545.2	20.2	2439	890
Nashik	8399906	1482	541	528	192.9	64.4	1933	705
Marathwada	8470561	1495	546	400	145.9	73.3	1949	711
Amravati	5095907	899	328	251	91.6	72.1	1172	428
Nagpur	5308431	937	342	522	190.5	44.3	1221	446
Total	50826298	8969	3274	4578	1671.1	49.0	11694	4268

Source: Maharashtra Jeevan Pradhikaran

Additional Provision for Water Supply Schemes for Saline (Khar-Pan-Patta) Area

Sr. No.	Taluka	District	Population of Taluka as per Census 2011	50% Population of Totally Affected Taluka & 25% Population of Partially Affected Taluka	Additional Cost per capita for Water Supply (Rs.)	Additional Requirement for Water Supply Schemes in Saline Area (Rs. Crore)
1	2	3	4	5	6	7
1	Daryapur	Amravati	174998	87499	2500	22
2	Bhatkuli	Amravati	1134789	567395	2500	142
3	Anjangaon (Surji)	Amravati	161090	80545	2500	20
4	Achalpur (Partially)	Amravati	279030	69758	2500	17
5	Amravati(Partially)	Amravati	787056	196764	2500	49
6	Akola	Akola	736091	368046	2500	92
7	Balapur	Akola	190467	95234	2500	24
8	Murtijapur	Akola	175692	87846	2500	22
9	Telhara	Akola	172592	86296	2500	22
10	Akot	Akola	255610	127805	2500	32
11	Shegaon	Buldhana	156289	78145	2500	20
12	Samgrampur	Buldhana	136535	68268	2500	17
13	Jalgaon (Jamod)	Buldhana	156619	78310	2500	20
14	Nandura	Buldhana	176133	88067	2500	22
15	Malkapur	Buldhana	178642	89321	2500	22
Total Provision						542

Reference: 1) Page 232,Chapter10, MWIC Report

2) 50% part of Taluka is considered for partially affected Taluka

3) Additional provision mentioned in Col.6 is in addition to normal norms of rural water supply schemes

Annex 10.28

Funds Required for Additional Water Supply for Talukas Having Unfavourable Strata for Water Retention

(Rs. In Crore)

Sr No	Revenue Division	No. of Talukas	Population as per Census 2011	50% of Population	Amount @ Rs. 2500/- per Capita
1	2	3	4	5	6
1	Konkan	38	5789574	2894787	724
2	Nashik	10	2065492	1032746	258
3	Pune	10	1942952	971476	243
A	Rest of Maharashtra	58	9798018	4899009	1225
4	Aurangabad	15	2320834	1160417	290
B	Marathwada	15	2320834	1160417	290
5	Amaravati	3	472273	236137	59
6	Nagpur	9	1261862	630931	158
C	Vidarbha	12	1734135	867068	217
A+B+C	Maharashtra	85	13852987	6926494	1732

**Urgent Funds Required for Supply of Water to Talukas Under Acute Water Shortage
The Funds Required for Water Supply to Highly Deficit Water Availability and
Highly Exploited Watershed Talukas**

(Rs. In Crore)

Sr. No.	Region	District	Sr. No.	Talukas with Rainfall up to 750 mm and Potential Creation Less Than 30%, 3 to 10 Years Frequency of Water Supply by Tanker or Crop Anewari Less Than 50	Population (2011)	50% of Population in 2011	Funds Required for Water Supply to Population in Col. 7 (Rs. 2500 per capita)
1	2	3	4	5	6	7	8
1	Nashik Region	Nashik	1	Sinnar	345556	172778	43.2
		Nashik	2	Chandwad	235403	117702	29.4
		Nashik	3	Nandgaon	288723	144362	36.1
		Dhule	4	Sindkheda	323073	161537	40.4
		Nandurbar	5	Nandurbar	367385	183693	45.9
		Jalgaon	6	Pachora	289444	144722	36.2
		Jalgaon	7	Amalner	287629	143815	36.0
		Ahemadnagar	8	Ahemadnagar	683808	341904	85.5
		Ahemadnagar	9	Sangamner	489263	244632	61.2
		Ahemadnagar	10	Parner	274128	137064	34.3
		Ahemadnagar	11	Jamkhed	158606	79303	19.8
		Ahemadnagar	12	Shevgaon	245674	122837	30.7
		Ahemadnagar	13	Pathardi	258021	129011	32.3
Total Nashik Region			13		4246713	2123357	530.8
2	Pune Region	Pune	1	Purandar	236152	118076	29.5
		Pune	2	Khed	447373	223687	55.9
		Pune	3	Haveli	2437849	1218925	304.7
		Solapur	4	Madha	323727	161864	40.5
		Solapur	5	Barshi	372416	186208	46.6
		Solapur	6	Akkalkot	314415	157208	39.3
		Solapur	7	Sangola	323418	161709	40.4
		Satara	8	Khataav	275105	137553	34.4
		Satara	9	Khandala	137454	68727	17.2
		Satara	10	Man	199598	99799	28.2
		Sangali	11	Jat	327747	163874	41.0
		Sangali	12	Khanapur	170195	85098	21.3
		Sangali	13	Atpadi	138440	69220	17.3
		Sangali	14	Kawthemahakal	152333	76167	19.0
		Sangali	15	Tasgaon	251336	125668	31.4
Total Pune Region			15		6107558	3053779	767.0

Annex 10.29

Sr. No.	Region	District	Sr. No.	Talukas with Rainfall 750 mm and Potential Creation Less Than 30%, 3 to 10 Years Frequency of Water Supply by Tanker or Crop Anewari Less Than 50	Population (2011)	50% of Population in 2011	Funds Required for Water Supply to Population in Col. 7 (Rs. 2500 per capita)
1	2	3	4	5	6	7	8
3	Marathwada	Aurangabad	1	Vaijapur	310706	155353	38.8
		Aurangabad	2	Paithan	347799	173900	43.5
		Aurangabad	3	Gangapur	358263	179132	44.8
		Aurangabad	4	Kannad	340905	170453	42.6
		Jalna	5	Ambad	255800	127900	32.0
		Jalna	6	Jafrabad	163174	81587	20.4
		Jalna	7	Bhokardan	311112	155556	38.9
		Beed	8	Ashti	243651	121826	30.5
		Beed	9	Georai	338570	169285	42.3
		Beed	10	Kaij	243965	121983	30.5
		Osmanabad	11	Osmanabad	406647	203324	50.8
		Osmanabad	12	Bhoom	137000	68500	17.1
		Osmanabad	13	Paranda	140436	70218	17.6
Total Marathwada			13		3598028	1799014	449.8
4	Amravati Region	Buldhana	1	Deolgaon Raja	125951	62976	15.7
		Amravati	2	Chandurbazar	195909	97955	24.5
		Yeatmal	3	Maregaon	78696	39348	9.8
Total Amravati			3		400556	200278	50.1
Total Maharashtra					14352855	7176428	1797.7

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Annex 11.1

District Population and Population Density (2011)

Sr. No.	District	Population	Density (Per sq. km.)
1	2	3	4
1	Aurangabad	3695928	365
2	Beed	2585962	242
3	Hingoli	1178973	244
4	Jalna	1958483	255
5	Latur	2455543	343
6	Nanded	3356566	319
7	Osmanabad	1660311	219
8	Parbhani	1835982	295
	Marathwada	18727748	289
9	Akola	1818617	321
10	Amaravati	2887826	237
11	Bhandara	1198810	268
12	Buldhana	2588039	268
13	Chandrapur	2194262	192
14	Gadchiroli	1071795	74
15	Gondia	1322331	253
16	Nagpur	4653171	470
17	Wardha	1296157	205
18	Washim	1196714	244
19	Yavatmal	2775457	204
	Vidarbha	23003179	236
20	Ahmednagar	4543083	266
21	Dhule	2048781	285
22	Jalgaon	4224442	359
23	Kolhapur	3874015	504
24	Mumbai City	3145966	20038
25	Mumbai (Suburban)	9332481	20925
26	Nandurbar	1646177	276
27	Nashik	6109052	393
28	Pune	9426959	603
29	Raigad	2635394	368
30	Ratnagiri	1612672	196
31	Sangli	2820575	329
32	Satara	3003922	287
33	Sindhudurg	848868	163
34	Solapur	4315527	290
35	Thane	11054131	1157
	Rest of Maharashtra	70642045	485
	Maharashtra	112372972	365

Source : Census 2011

Distribution of Rural and Urban Population With the Estimated Tribal Population (2011)

Sr. No.	District	Rural	Urban	Total	% Urban	% Tribal	Tribal Population*
1	2	3	4	5	6	7	8
1	Aurangabad	2079327	1616601	3695928	43.7	3.5	128249
2	Beed	2071277	514685	2585962	19.9	1.1	28963
3	Hingoli	1000102	178871	1178973	15.2	8.8	103750
4	Jalana	1581251	377232	1958483	19.3	2.0	38974
5	Latur	1830085	625458	2455543	25.5	2.3	56477
6	Nanded	2442734	913832	3356566	27.2	8.8	296049
7	Osmanabad	1378713	281598	1660311	17.0	1.9	31048
8	Parbhani	1266112	569870	1835982	31.0	2.3	42228
Marathwada		13649601	5078147	18727748	27.1	3.9	725737
9	Akola	1096768	721849	1818617	39.7	6.1	111663
10	Amaravati	1851134	1036692	2887826	35.9	13.7	395055
11	Bhandara	965053	233757	1198810	19.5	8.6	103098
12	Buldhana	2038650	549389	2588039	21.2	5.2	133284
13	Chandrapur	1424424	769838	2194262	35.1	18.1	397600
14	Gadchiroli	953858	117937	1071795	11.0	38.3	410605
15	Gondia	1096631	225700	1322331	17.1	16.4	216333
16	Nagpur	1474977	3178194	4653171	68.3	10.9	508592
17	Wardha	875284	420873	1296157	32.5	12.5	161890
18	Washim	985058	211656	1196714	17.7	7.0	83291
19	Yavatmal	2176252	599205	2775457	21.6	19.3	534275
Vidarbha		14938089	8065090	23003179	35.1	13.4	3055686
20	Ahmednagar	3630012	913071	4543083	20.1	7.5	340731
21	Dhule	1477034	571747	2048781	27.9	26.0	532068
22	Jalgaon	2880984	1343458	4224442	31.8	11.8	500174
23	Kolhapur	2644119	1229896	3874015	31.8	0.6	23244
24	Mumbai	0	12478447	12478447	100.0	0.0	0
25	Nandurbar	1370995	275182	1646177	16.7	65.5	1078740
26	Nashik	3510885	2598167	6109052	42.5	23.9	1460674
27	Pune	3687243	5739716	9426959	60.9	3.6	341256
28	Raigad	1662585	972809	2635394	36.9	12.2	320991
29	Ratnagari	1349062	263610	1612672	16.4	1.2	19030
30	Sangli	2101143	719432	2820575	25.5	0.7	19462
31	Satara	2433694	570228	3003922	19.0	0.8	23431
32	Sindhudurg	741870	106998	848868	12.6	0.6	4923
33	Solapur	2917088	1398439	4315527	32.4	1.8	77248
34	Thane	2551037	8503094	11054131	76.9	14.7	1629379
Rest of Maharashtra		32957751	37684294	70642045	53.4	8.6	6371351
Maharashtra		61545441	50827531	112372972	45.2	8.9	9945008

Source : Census, 2011

* Provisional estimates

Annex 11.3

Child Population (2011)					
Sr. No.	District	Male	Female	Total 0-6 Population	% Children
1	2	3	4	5	6
1	Aurangabad	279582	237209	516791	13.98
2	Beed	191115	153007	344122	13.31
3	Hingoli	86250	74836	161086	13.66
4	Jalna	152430	129065	281495	14.37
5	Latur	164361	143365	307726	12.53
6	Nanded	234249	210217	444466	13.24
7	Osmanabad	107695	91814	199509	12.02
8	Parbhani	134971	116880	251851	13.72
	Marathwada	1350653	1156393	2507046	13.39
9	Akola	108425	97628	206053	11.33
10	Amravati	155572	144234	299806	10.38
11	Bhandara	63398	59533	122931	10.25
12	Buldana	176116	148273	324389	12.53
13	Chandrapur	115090	108771	223861	10.2
14	Gadchiroli	58842	56262	115104	10.74
15	Gondia	70015	66101	136116	10.29
16	Nagpur	250223	231591	481814	10.35
17	Wardha	65005	59531	124536	9.61
18	Washim	79318	68149	147467	12.32
19	Yavatmal	167346	153095	320441	11.55
	Vidarbha	1309350	1193168	2502518	10.88
20	Ahmednagar	292242	245104	537346	11.83
21	Dhule	139345	122052	261397	12.76
22	Jalgaon	280915	232882	513797	12.16
23	Kolhapur	214144	180999	395143	10.2
24	Mumbai City	139906	122323	262229	8.34
25	Mumbai (Suburban)	459101	417816	876917	9.4
26	Nandurbar	119694	111574	231268	14.05
27	Nashik	427878	377424	805302	13.18
28	Pune	569916	497345	1067261	11.32
29	Raigad	150938	139501	290439	11.02
30	Ratnagiri	77066	72420	149486	9.27
31	Sangli	158499	136556	295055	10.46
32	Satara	163605	144068	307673	10.24
33	Sindhudurg	35930	32707	68637	8.09
34	Solapur	277726	242055	519781	12.04
35	Thane	655354	601726	1257080	11.37
	Rest of Maharashtra	4162259	3676552	7838811	11.1
	Total	6822262	6026113	12848375	11.43

Source : Census 2011

Population Sex Ratio and Child Sex Ratio (2011)*

Sr. No.	District	Population Sex Ratio	Child Sex Ratio
1	2	3	4
1	Aurangabad	917	848
2	Beed	912	801
3	Hingoli	935	868
4	Jalna	929	847
5	Latur	924	872
6	Nanded	937	897
7	Osmanabad	920	853
8	Parbhani	940	866
Marathwada		926	856
9	Akola	942	900
10	Amaravati	947	927
11	Bhandara	984	939
12	Buldhana	928	842
13	Chandrapur	959	945
14	Gadchiroli	975	956
15	Gondia	996	944
16	Nagpur	948	926
17	Wardha	946	916
18	Washim	926	859
19	Yavatmal	947	915
Vidarbha		951	911
20	Ahmednagar	934	839
21	Dhule	941	932
22	Jalgaon	922	829
23	Kolhapur	953	845
24	Mumbai City	838	874
25	Mumbai (Suburban)	857	910
26	Nandurbar	972	883
27	Nashik	931	882
28	Pune	910	873
29	Raigad	955	924
30	Ratnagiri	1123	940
31	Sangli	964	862
32	Satara	986	881
33	Sindhudurg	1037	910
34	Solapur	932	872
35	Thane	880	918
Rest of Maharashtra		917	883
Maharashtra		925	883

Source : Census 2011

* Number of females per 1000 males

Annex 11.5

Proportion of 60+ Year Population (2011)

Sr. No.	District	% Seniors
1	2	3
1	Aurangabad	9.2
2	Beed	10.9
3	Hingoli	10.6
4	Jalna	10.9
5	Latur	10.3
6	Nanded	9.4
7	Osmanabad	11.5
8	Parbhani	10.5
	Marathwada	10.2
9	Akola	9.7
10	Amaravati	10.5
11	Bhandara	9.1
12	Buldhana	10.3
13	Chandrapur	8.7
14	Gadchiroli	8.7
15	Gondia	8.5
16	Nagpur	8.8
17	Wardha	11.4
18	Washim	10.1
19	Yavatmal	9.4
	Vidarbha	9.5
20	Ahmednagar	9.6
21	Dhule	9.5
22	Jalgaon	9.9
23	Kolhapur	9.3
24	Mumbai City	8.5
25	Mumbai (Suburban)	6.5
26	Nandurbar	7.6
27	Nashik	7.9
28	Pune	8.0
29	Raigad	8.0
30	Ratnagiri	12.0
31	Sangli	10.7
32	Satara	11.2
33	Sindhudurg	13.4
34	Solapur	9.5
35	Thane	5.5
	Rest of Maharashtra	8.2
	Maharashtra	9.1

Source : UNFPA, estimates based on the Census 2011

Crude Death Rate in Rural Area (2011)

Sr. No.	District	Crude Death Rate
1	2	3
1	Aurangabad	5.8
2	Beed	5.5
3	Hingoli	4.8
4	Jalna	5.0
5	Latur	5.8
6	Nanded	5.3
7	Osmanabad	6.4
8	Parbhani	4.7
Marathwada		4.7-6.4
9	Akola	6.1
10	Amaravati	6.7
11	Bhandara	7.7
12	Buldhana	6.8
13	Chandrapur	6.9
14	Gadchiroli	7.4
15	Gondia	6.6
16	Nagpur	6.9
17	Wardha	7.1
18	Washim	6.5
19	Yavatmal	6.1
Vidarbha		6.1-7.7
20	Ahmednagar	5.2
21	Dhule	6.6
22	Jalgaon	5.8
23	Kolhapur	6.6
24	Nandurbar	5.5
25	Nashik	5.7
26	Pune	6.4
27	Raigad	6.7
28	Ratnagiri	9.5
29	Sangli	7.2
30	Satara	7.9
31	Sindhudurg	10.1
32	Solapur	5.6
33	Thane	4.8
Rest of Maharashtra		4.8-10.1
Maharashtra		6.3

Source : Survey of Cause of Death, Dept of Health and FW, GoM

Annex 11.7

Districtwise Infant Mortality Rate Estimates

Sr. No.	District	IMR
1	2	3
1	Aurangabad	33.6
2	Beed	31.8
3	Hingoli	37.7
4	Jalna	36.2
5	Latur	36.4
6	Nanded	33.6
7	Osmanabad	36.1
8	Parbhani	38.8
Marathwada		35.0
9	Akola	29.2
10	Amravati	46.5
11	Bhandara	40.8
12	Buldana	34.7
13	Chandrapur	55.2
14	Gadchiroli	47.5
15	Gondia	45.2
16	Nagpur	33.5
17	Wardha	39.2
18	Washim	32.9
19	Yavatmal	40.1
Vidarbha		39.5
20	Ahmednagar	29.7
21	Dhule	36.1
22	Jalgaon	42.4
23	Kolhapur	21.8
24	Mumbai City	20.1
25	Mumbai (Suburban)	18.4
26	Nandurbar	43.4
27	Nashik	32.4
28	Pune	23.4
29	Raigad	28.9
30	Ratnagiri	20.2
31	Sangli	24.6
32	Satara	22.4
33	Sindhudurg	27.2
34	Solapur	25.6
35	Thane	28.8
Rest of Maharashtra		28.8
Maharashtra		31.2

Source : DLHS-2 and DLHS-3 (IIPS)

Child Mortality Indicators						
Sr. No.	District	NNMR 2010	PNMR 2010	1-4yMR 2010	1-59mMR 2010	U5MR 2010
1	2	3	4	5	6	7
1	Aurangabad	24.7	8.8	9.8	18.6	43.4
2	Beed	23.0	8.9	9.0	17.9	40.9
3	Hingoli	31.1	6.6	12.0	18.6	49.7
4	Jalna	30.1	6.1	11.3	17.3	47.4
5	Latur	24.5	11.9	11.4	23.3	47.8
6	Nanded	29.5	4.1	9.9	14.0	43.5
7	Osmanabad	31.1	5.0	11.1	16.1	47.2
8	Parbhani	31.8	7.0	12.5	19.4	51.2
Marathwada		23.0-31.8	4.1-11.9	9.0-12.5	14.0-23.3	40.9-51.2
9	Akola	22.9	6.3	7.9	14.1	37.1
10	Amravati	30.0	16.5	16.9	33.4	63.4
11	Bhandara	38.3	2.5	13.5	16.0	54.3
12	Buldhana	32.4	2.3	10.3	12.6	45.0
13	Chandrapur	43.9	11.2	22.4	33.7	77.6
14	Gadchiroli	34.4	13.1	17.4	30.5	65.0
15	Gondia	38.3	6.9	16.2	23.0	61.4
16	Nagpur	28.4	5.1	10.0	15.1	43.4
17	Wardha	35.6	3.6	12.7	16.2	51.8
18	Washim	26.2	6.7	9.5	16.2	42.4
19	Yavatmal	34.9	5.2	13.1	18.3	53.2
Vidarbha		22.9-43.9	2.8-16.5	7.9-22.4	12.6-33.7	37.1-77.6
20	Ahmednagar	19.3	10.4	8.2	18.6	37.9
21	Dhule	25.0	11.1	11.4	22.4	47.4
22	Jalgaon	36.9	5.5	14.6	20.0	57.0
23	Kolhapur	15.9	5.9	5.3	11.2	27.0
24	Mumbai City	15.7	4.4	4.8	9.2	24.9
25	Mumbai (Suburban)	15.9	2.5	4.3	6.7	22.7
26	Nandurbar	21.4	22.0	15.0	37.0	58.4
27	Nashik	24.9	7.5	9.4	16.9	41.8
28	Pune	18.2	5.2	5.8	10.9	29.1
29	Raigad	23.8	5.1	7.9	13.0	36.8
30	Ratnagiri	11.9	8.3	5.3	13.6	25.5
31	Sangli	22.0	2.6	6.3	8.9	30.9
32	Satara	19.1	3.3	5.5	8.8	27.9
33	Sindhudurg	20.4	6.8	7.1	14.0	34.4
34	Solapur	20.2	5.3	6.5	11.8	32.1
35	Thane	19.3	9.5	7.8	17.3	36.6
Rest of Maharashtra		11.9-36.9	2.5-22.0	4.3-15.0	6.7-37.0	22.7-58.4
Maharashtra		24.2	7.0	9.3	16.3	40.5

Source : Derived from DLHS 2 & 3

Annex 11.9

District wise Maternal Mortality Ratio (2011-12)

Sr. No.	District	MMR (Per lakh deliveries)
1	2	3
1	Aurangabad	57.0
2	Beed	46.0
3	Hingoli	95.0
4	Jalana	47.0
5	Latur	80.0
6	Nanded	74.0
7	Osmanabad	43.0
8	Parbhani	42.0
Marathwada		60.0
9	Akola	161.0
10	Amaravati	123.0
11	Bhandara	92.0
12	Buldhana	29.0
13	Chandrapur	102.0
14	Gadchiroli	184.0
15	Gondia	57.0
16	Nagpur	178.0
17	Wardha	77.0
18	Washim	15.0
19	Yavatmal	87.0
Vidarbha		108.0
20	Ahmednagar	74.0
21	Dhule	136.0
22	Jalgaon	77.0
23	Kolhapur	74.0
24	Nandurbar	126.0
25	Nashik	85.0
26	Pune	47.0
27	Raigad	58.0
28	Ratnagari	43.0
29	Sangli	70.0
30	Satara	30.0
31	Sindhudurg	50.0
32	Solapur	85.0
33	Thane	43.0
Rest of Maharashtra		93.0
Maharashtra		90.0

Source : MIS, Dept of Health & FW, GoM

Estimated Life Expectancy at Birth

Sr. No.	District	Life Expectancy at Birth (years)
1	2	3
1	Aurangabad	71.1
2	Beed	73.9
3	Hingoli	69.8
4	Jalna	70.1
5	Latur	68.6
6	Nanded	74.8
7	Osmanabad	69.3
8	Parbhani	69.3
Marathwada		69.0
9	Akola	74.4
10	Amravati	66.4
11	Bhandara	66.7
12	Buldana	73.4
13	Chandrapur	62.8
14	Gadchiroli	65.6
15	Gondia	64.8
16	Nagpur	72.0
17	Wardha	65.4
18	Washim	70.6
19	Yavatmal	70.0
Vidarbha		68.0
20	Ahmednagar	71.7
21	Dhule	70.9
22	Jalgaon	69.7
23	Kolhapur	75.0
24	Mumbai City	75.0
25	Mumbai (Suburban)	75.0
26	Nandurbar	62.7
27	Nashik	70.4
28	Pune	74.0
29	Raigad	72.9
30	Ratnagiri	75.0
31	Sangli	73.2
32	Satara	74.8
33	Sindhudurg	72.4
34	Solapur	74.7
35	Thane	75.0
Rest of Maharashtra		70.0
Maharashtra		69.0

Source : Derived from DLHS 3

Annex 11.11

Morbidity in Children (2007-08)

Sr. No.	District	Children	% Diarrhea	% ARI
1	2	3	4	5
1	Aurangabad	485	20.5	11.6
2	Beed	473	19.9	10.7
3	Hingoli	515	26.3	14.6
4	Jalna	487	25.2	14.6
5	Latur	514	28.0	10.4
6	Nanded	412	20.4	7.9
7	Osmanabad	422	21.8	6.7
8	Parbhani	490	18.9	13.0
	Marathwada	3798	22.8	11.4
9	Akola	360	25.8	14.9
10	Amravati	325	24.1	15.4
11	Bhandara	307	19.5	18.3
12	Buldana	392	31.3	21.2
13	Chandrapur	290	15.9	8.4
14	Gadchiroli	594	20.1	16.9
15	Gondia	325	20.5	20.3
16	Nagpur	250	19.2	16.5
17	Wardha	306	24.5	12.0
18	Washim	473	15.2	14.9
19	Yavatmal	493	26.1	12.0
	Vidarbha	4115	22.1	15.6
20	Ahmednagar	372	17.8	10.0
21	Dhule	455	24.5	14.8
22	Jalgaon	398	30.5	14.5
23	Kolhapur	329	14.4	5.9
24	Mumbai City	297	9.4	5.7
25	Mumbai (Suburban)	292	12.5	11.2
26	Nandurbar	498	17.5	11.5
27	Nashik	396	18.4	12.8
28	Pune	325	14.5	9.1
29	Raigad	248	14.8	5.9
30	Ratnagiri	256	9.0	9.2
31	Sangli	290	13.5	3.8
32	Satara	324	15.2	7.5
33	Sindhudurg	211	12.3	6.0
34	Solapur	386	11.8	4.2
35	Thane	371	14.3	12.2
	Rest of Maharashtra	5448	16.3	9.5
	Maharashtra	13361	19.9	12.0

Source : DLHS - 3

Malaria Incidence and Prevalence

Sr. No.	District	Incidence (2010-11)*	Prevalence**
1	2	3	4
1	Aurangabad	7.2	1996
2	Beed	9.0	2028
3	Hingoli	2.7	1112
4	Jalna	2.1	1658
5	Latur	9.6	1138
6	Nanded	23.2	2079
7	Osmanabad	5.8	921
8	Parbhani	7.3	1477
Maratahwada		9.9	921-2079
9	Akola	8.4	854
10	Amaravati	19.6	2361
11	Bhandara	25.1	1383
12	Buldhana	15.5	1073
13	Chandrapur	44.5	1787
14	Gadchiroli	524.1	1793
15	Gondia	639.3	1365
16	Nagpur	62.5	841
17	Wardha	33.4	1483
18	Washim	35.0	1595
19	Yavatmal	29.6	1923
Vidarbha		58.9	841-1923
20	Ahmednagar	47.6	1500
21	Dhule	103.9	1050
22	Jalgaon	25.0	2690
23	Kolhapur	5.0	2356
24	Mumbai (Suburban)	419.5	352(234)
25	Nandurbar	123.1	1821
26	Nashik	64.2	1336
27	Pune	14.1	816
28	Raigad	173.3	1001
29	Ratnagiri	129.0	2099
30	Sangli	14.1	745
31	Satara	26.9	878
32	Sindhudurg	50.8	321
33	Solapur	5.9	878
34	Thane	163.2	572
Rest of Maharashtra		136.3	321-2690
Maharashtra		103.1	1317

* MIS of the Dept. of Health. The incidence is the Annual Parasite Incidence per 100,000 population

** DLHS-2. Prevalence is self reported fever with chills and rigors cases per 100,000 population

Annex 11.13

Prevalence of Tuberculosis in Maharashtra State

Sr. No.	District	Prevalence / lakh**
1	2	3
1	Aurangabad	185
2	Beed	360
3	Hingoli	165
4	Jalna	187
5	Latur	186
6	Nanded	257
7	Osmanabad	203
8	Parbhani	294
Marathwada		233#
9	Akola	238
10	Amravati	430
11	Bhandara	278
12	Buldana	357
13	Chandrapur	384
14	Gadchiroli	514
15	Gondia	311
16	Nagpur	263
17	Wardha	257
18	Washim	348
19	Yavatmal	121
Vidarbha		306#
20	Ahmednagar	171
21	Dhule	224
22	Jalgaon	93
23	Kolhapur	95
24	Mumbai City	135
25	Mumbai (Suburban)	152
26	Nandurbar	265
27	Nashik	129
28	Pune	217
29	Raigad	155
30	Ratnagiri	43
31	Sangli	96
32	Satara	208
33	Sindhudurg	164
34	Solapur	71
35	Thane	303
Rest of Maharashtra		179#@
Maharashtra		218

**Maharashtra DLHS-2 (2002-04)

#Rough Estimate on 2011 Population, @Excluding Mumbai

HIV Positivity (2007-11)

Sr. No.	District	% ANC	% ICTC Clients*
1	2	3	4
1	Aurangabad	0.25	5.07
2	Beed	0.35	6.87
3	Hingoli	0.26	3.30
4	Jalna	0.21	2.68
5	Latur	0.34	6.06
6	Nanded	0.43	5.88
7	Osmanabad	0.41	5.65
8	Parbhani	0.38	7.01
Marathwada		0.33	5.49
9	Akola	0.24	4.34
10	Amravati	0.24	2.13
11	Bhandara	0.37	2.74
12	Buldhana	0.12	1.96
13	Chandrapur	0.34	3.55
14	Gadchiroli	0.11	0.92
15	Gondia	0.27	2.38
16	Nagpur	0.53	5.62
17	Wardha	0.29	2.69
18	Washim	0.27	3.73
19	Yavatmal	0.45	5.67
Vidarbha		0.33	3.60
20	Ahmednagar	0.30	5.44
21	Dhule	0.24	6.94
22	Jalgaon	0.29	4.00
23	Kolhapur	0.47	9.13
24	Mumbai	0.66	8.22
25	Nandurbar	0.25	3.46
26	Nashik	0.26	3.87
27	Pune	0.57	6.84
28	Raigad	0.30	3.76
29	Ratnagiri	0.24	3.84
30	Sangli	0.76	11.39
31	Satara	0.39	7.02
32	Sindhudurg	0.16	2.04
33	Solapur	0.50	8.99
34	Thane	0.53	6.01
Rest of Maharashtra		0.46	6.76
Maharashtra		0.41	5.81

* Persons coming voluntarily for HIV testing at the Integrated Counselling and Treatment Centres

Source: Maharashtra State AIDS Control Society

Annex 11.15

Malnutrition in Under Five Children

Sr. No.	District	% -2SD* SD*	%-3SD*	MPR-12**
1	2	3	4	5
1	Aurangabad	51	16.1	10.5
2	Beed	50	14.7	8.1
3	Hingoli	59	21.6	11.2
4	Jalna	55	18.2	8.7
5	Latur	51	14.6	6.0
6	Nanded	56	21.7	7.4
7	Osmanabad	45	12.4	9.3
8	Parbhani	57	20.1	9.0
Marathwada		53	12.4-21.6	8.6
9	Akola	51	16.3	9.6
10	Amaravati	56	18.9	18.5
11	Bhandara	51	13.3	8.5
12	Buldhana	58	19.4	13.9
13	Chandrapur	59	21.1	12.3
14	Gadchiroli	62	27.6	23.6
15	Gondia	57	19.6	10.9
16	Nagpur	46	13.5	11.6
17	Wardha	53	16.0	11.5
18	Washim	59	21.3	10.8
19	Yavatmal	60	21.4	10.5
Vidarbha		55	13.3-27.6	12.9
20	Ahmednagar	40	12.0	7.4
21	Dhule	52	20.1	13.3
22	Jalgaon	51	14.5	9.5
23	Kolhapur	36	11.2	10.1
24	Mumbai City	38	8.5	N.A.
25	Mumbai (Suburban)	35	7.9	N.A.
26	Nandurbar	67	37.3	33.3
27	Nashik	59	24.3	16.8
28	Pune	35	7.1	7.8
29	Raigad	39	10.0	4.9
30	Ratnagiri	37	10.0	11.2
31	Sangli	40	10.6	4.5
32	Satara	35	7.5	8.6
33	Sindhudurg	43	12.9	13.9
34	Solapur	48	15.5	9.7
35	Thane	49	13.1	15.3
Rest of Maharashtra		43	7.1-37.3	11.6
Maharashtra		48	15.0	10.0

Source: DLHS-2

** Monthly Progress Reports 2012, Rajmata Jijau Mother- Child Health and Nutrition Mission

Prevalence of Blindness Per Lakh Population (2002-04)

Sr. No.	District	Blindness P	Blindness C
1	2	3	4
1	Aurangabad	14577	315
2	Beed	7932	240
3	Hingoli	6603	199
4	Jalna	5314	289
5	Latur	6624	295
6	Nanded	13166	223
7	Osmanabad	7194	508
8	Parbhani	5413	623
Marathwada		5413-14577	323*
9	Akola	6496	220
10	Amravati	15076	504
11	Bhandara	8295	318
12	Buldana	15341	150
13	Chandrapur	13417	256
14	Gadchiroli	9093	760
15	Gondia	3676	194
16	Nagpur	11305	365
17	Wardha	18977	449
18	Washim	5045	209
19	Yavatmal	7064	242
Vidarbha		3676-18977	324*
20	Ahmednagar	5938	759
21	Dhule	6471	104
22	Jalgaon	16685	149
23	Kolhapur	3605	134
24	Mumbai City	1601	39
25	Mumbai (Suburban)	1405	114
26	Nandurbar	2954	71
27	Nashik	13151	202
28	Pune	5296	412
29	Raigad	3786	116
30	Ratnagiri	5972	214
31	Sangli	7133	116
32	Satara	6152	341
33	Sindhudurg	12182	492
34	Solapur	6977	89
35	Thane	11918	108
Rest of Maharashtra		1405-16685	241**
Maharashtra		8449	279

Source: DLHS-2, * Rough Estimate by 2011 Population, **Excluding Mumbai

Annex 11.17

Road Traffic Accidents (2011) (Per Lakh Population)

Sr. No.	District	Accidents	Killed	Injured
1	2	3	4	5
1	Aurangabad	37.4	14.0	41.5
2	Beed	25.6	13.4	20.5
3	Hingoli	29.9	8.0	55.8
4	Jalna	25.4	11.3	19.1
5	Latur	25.7	8.9	17.8
6	Nanded	29.8	8.0	27.7
7	Osmanabad	45.4	17.6	71.4
8	Parbhani	24.2	8.5	23.5
	Marathwada	30.6	11.3	32.4
9	Akola	39.6	10.6	39.3
10	Amravati	40.7	11.4	39.1
11	Bhandara	43.3	13.1	59.1
12	Buldhana	26.1	14.2	30.1
13	Chandrapur	41.7	13.8	42.8
14	Gadchiroli	20.7	10.2	33.0
15	Gondia	27.8	9.4	34.3
16	Nagpur	53.2	16.8	53.1
17	Wardha	47.5	15.0	58.0
18	Washim	22.2	9.4	19.4
19	Yavatmal	32.1	9.9	26.5
	Vidarbha	38.4	12.8	40.3
20	Ahmednagar	49.0	17.3	44.0
21	Dhule	71.2	16.4	99.5
22	Jalgaon	30.2	12.1	38.0
23	Kolhapur	38.4	8.9	36.7
24	Mumbai	138.3	3.1	27.5
25	Nandurbar	41.7	9.2	65.7
26	Nashik	61.9	15.0	41.0
27	Pune	37.8	14.0	32.8
28	Raigad	58.6	12.6	57.4
29	Ratnagiri	60.0	9.2	73.3
30	Sangli	31.0	9.9	32.8
31	Satara	33.5	9.8	42.6
32	Sindhudurg	49.2	9.4	68.3
33	Solapur	41.0	16.2	48.4
34	Thane	57.3	11.3	35.2
	Rest of Maharashtra	69.0	10.5	39.5
	Maharashtra	57.0	11.0	38.6

Source : Motor Transport Statistics of Maharashtra 2010-2011

Crude Birth Rate (2010-11)

Sr. No.	District	CBR_P-2010 *	CBR**
1	2	3	4
1	Aurangabad	19.9	17.2
2	Beed	19.7	17.1
3	Hingoli	25.5	18.2
4	Jalna	26.1	20.5
5	Latur	24.5	17.7
6	Nanded	16.4	18.3
7	Osmanabad	18.7	15.5
8	Parbhani	24.4	17.3
Marathwada		16.4-26.1	17.1-20.5
9	Akola	20.3	17.9
10	Amravati	15.1	14.9
11	Bhandara	19.5	15.3
12	Buldana	17.5	19.3
13	Chandrapur	14.7	13.5
14	Gadchiroli	19.1	15.7
15	Gondia	18.8	15.9
16	Nagpur	11.9	14.8
17	Wardha	13.8	14.8
18	Washim	24.5	16.5
19	Yavatmal	23.9	15.2
Vidarbha		11.9-24.5	13.5-19.3
20	Ahmednagar	16.4	17.2
21	Dhule	23.6	18.2
22	Jalgaon	17.0	15.7
23	Kolhapur	18.6	14.1
24	Mumbai City	17.2	N.A.
25	Mumbai (Suburban)	16.3	N.A.
26	Nandurbar	23.5	22.8
27	Nashik	18.2	17.2
28	Pune	15.5	16.8
29	Raigad	16.1	14.5
30	Ratnagiri	16.2	10.8
31	Sangli	13.4	17.1
32	Satara	14.2	15.2
33	Sindhudurg	10.7	11.1
34	Solapur	20.9	17.1
35	Thane	17.0	18.9
Rest of Maharashtra		10.7-23.6	10.8-22.8
Maharashtra		17.8	16.6

Source : *IIPS, ** SCD

Annex 11.19

Total Fertility Rate in Rural Area (2011)

Sr. No.	District	TFR
1	2	3
1	Aurangabad	2.3
2	Beed	2.3
3	Hingoli	2.5
4	Jalna	2.5
5	Latur	2.4
6	Nanded	2.4
7	Osmanabad	2.1
8	Parbhani	2.2
Marathwada		2.1-2.5
9	Akola	2.2
10	Amravati	1.8
11	Bhandara	1.8
12	Buldhana	2.9
13	Chandrapur	1.6
14	Gadchiroli	1.8
15	Gondia	2.2
16	Nagpur	1.7
17	Wardha	2.0
18	Washim	2.2
19	Yavatmal	1.7
Vidarbha		1.6-2.9
20	Ahmednagar	2.1
21	Dhule	2.1
22	Jalgaon	1.8
23	Kolhapur	1.8
24	Nandurbar	2.7
25	Nashik	2.2
26	Pune	2.0
27	Raigad	1.8
28	Ratnngiri	1.5
29	Sangli	2.1
30	Satara	1.9
31	Sindhudurg	1.5
32	Solapur	2.1
33	Thane	2.2
Rest of Maharashtra		1.5-2.7
Maharashtra		2.1

Source : Survey of Cause of Death, Dept. of Health & FW

Sub-Centers Required As Per 2011 Census Population

Sr. No.	District	Required Sub-Centers			Existing Sub-Centers+Recent Sanction				Total
		Tribal	N. T.	Total	Tribal	N. T.	New	Total	Deficit
1	2	3	4	5	6	7	8	9	10
1	Aurangabad	0	416	416	0	279	42	321	95
2	Beed	0	415	415	0	280	40	320	95
3	Hingoli	0	200	200	0	132	9	141	59
4	Jalna	0	317	317	0	213	12	225	92
5	Latur	0	366	366	0	252	0	252	114
6	Nanded	99	430	529	92	285	43	420	109
7	Osmanabad	0	276	276	0	206	21	227	49
8	Parbhani	0	254	254	0	214	10	224	30
	Marathwada	99	2674	2773	92	1861	177	2130	643
9	Akola	0	220	220	0	178	1	179	41
10	Amravati	132	292	424	95	238	35	368	56
11	Bhandara	0	193	193	0	193	0	193	0
12	Buldhana	0	408	408	0	280	11	291	117
13	Chandrapur	133	206	339	64	275	8	347	0
14	Gadchiroli	137	109	246	376	0	0	376	0
15	Gondia	72	176	248	125	112	22	259	0
16	Nagpur	170	194	364	26	290	7	323	41
17	Wardha	0	175	175	0	181	7	188	0
18	Washim	0	197	197	0	153	11	164	33
19	Yavatmal	178	329	507	118	317	47	482	25
	Vidarbha	822	2499	3321	804	2217	149	3170	313
20	Ahmednagar	114	658	772	68	487	47	602	170
21	Dhule	178	189	367	91	141	6	238	129
22	Jalgaon	167	476	643	16	426	19	461	182
23	Kolhapur	0	529	529	0	413	5	418	111
24	Nandurbar	360	59	419	278	12	32	322	97
25	Nashik	487	410	897	300	277	19	596	301
26	Pune	114	670	784	61	478	54	593	191
27	Raigad	107	269	376	19	269	56	344	32
28	Ratnngiri	0	270	270	0	378	2	380	0
29	Sangli	0	421	421	0	320	45	365	56
30	Satara	0	487	487	0	400	60	460	27
31	Sindhudurg	0	149	149	0	248	1	249	0
32	Solapur	0	584	584	0	431	147	578	6
33	Thane	544	185	729	346	146	62	554	175
	Rest of Maharashtra	2071	5356	7427	1179	4426	555	6160	1477
	Maharashtra	2992	10529	13521	2075	8504	881	11460	2433

Annex 11.21

Primary Health Centers (2011)									
Sr. No.	District	Tribal	N. T.	Total	Existing PHCs + Recent Sanction				Total Deficit
					Tribal	N. T.	New	Total	
1	2	3	4	5	6	7	8	9	10
1	Aurangabad	0	70	70	0	50	5	55	15
2	Beed	0	68	68	0	50	7	57	11
3	Hingoli	0	35	35	0	24	3	27	8
4	Jalna	0	53	53	0	40	5	45	8
5	Latur	0	61	61	0	46	4	50	11
6	Nanded	15	72	87	14	50	8	72	15
7	Osmanabad	0	46	46	0	42	3	45	1
8	Parbhani	0	43	43	0	31	8	39	4
	Marathwada	15	448	463	14	333	43	390	73
9	Akola	0	37	37	0	30	1	31	6
10	Amravati	20	49	69	11	45	5	61	8
11	Bhandara	0	32	32	0	33	0	33	0
12	Buldhana	0	68	68	0	52	5	57	11
13	Chandrapur	20	35	55	8	50	5	63	0
14	Gadchiroli	21	18	39	45	0	4	49	0
15	Gondia	11	30	41	19	20	6	45	0
16	Nagpur	26	33	59	4	45	7	56	3
17	Wardha	0	29	29	0	27	5	32	0
18	Washim	0	33	33	0	25	2	27	6
19	Yavatmal	27	55	82	19	44	10	73	9
	Vidarbha	125	419	544	106	371	50	527	43
20	Ahmednagar	17	110	127	9	87	10	106	21
21	Dhule	27	32	59	14	27	5	46	13
22	Jalgaon	25	80	105	2	75	2	79	26
23	Kolhapur	0	88	88	0	72	26	98	0
24	Nandurbar	54	10	64	56	2	6	64	0
25	Nashik	73	69	142	52	51	8	111	31
26	Pune	17	112	129	8	88	28	124	5
27	Raigad	16	45	61	3	49	16	68	0
28	Ratnngiri	0	45	45	0	67	2	69	0
29	Sangli	0	70	70	0	59	9	68	2
30	Satara	0	81	81	0	71	28	99	0
31	Sindhudurg	0	25	25	0	38	3	41	0
32	Solapur	0	98	98	0	77	8	85	13
33	Thane	82	31	113	51	27	10	88	25
	Rest of Maharashtra	311	896	1207	195	790	161	1146	136
	Maharashtra	451	1763	2214	315	1494	254	2063	252

Urban Health Posts (2012)						
Sr. No.	District	Corporations		Councils		Total
		RCH	GIA	RCH	GIA	
1	2	3	4	5	6	7
1	Aurangabad	9	7	0	0	16
2	Beed	0	0	4	0	4
3	Hingoli	0	0	0	0	0
4	Jalna	0	0	0	2	2
5	Latur	0	0	3	0	3
6	Nanded	4	4	2	0	10
7	Osmanabad	0	0	2	0	2
8	Parbhani	0	0	0	0	0
	Marathwada	13	11	0	0	24
9	Akola	4	4	2	0	10
10	Amravati	4	8	1	0	13
11	Bhandara	0	0	1	0	1
12	Buldhana	0	0	0	0	0
13	Chandrapur	0	0	3	5	8
14	Gadchiroli	0	0	0	0	0
15	Gondia	0	0	2	3	5
16	Nagpur	10	21	0	0	31
17	Wardha	0	0	0	0	0
18	Washim	0	0	0	0	0
19	Yavatmal	0	0	3	0	3
	Vidarbha	18	33	0	0	51
20	Ahmednagar	4	3	0	0	7
21	Dhule	5	0	0	0	5
22	Jalgaon	5	2	5	2	14
23	Kolhapur	4	3	0	0	7
24	Mumbai	156	56	0	0	212
25	Nandurbar	0	0	2	0	2
26	Nashik	10	9	0	0	19
27	Pune	16	18	0	0	34
28	Raigad	0	0	2	0	2
29	Ratnagiri	0	0	1	0	1
30	Sangli	8	0	0	0	8
31	Satara	0	0	2	0	2
32	Sindhudurg	0	0	0	0	0
33	Solapur	6	12	1	0	19
34	Thane	30	22	3	0	55
	Rest of Maharashtra	244	125	16	2	387
	Maharashtra	275	169	39	12	495

Source : Family Planning Bureau, GoM

Annex 11.23

Nurse Population Ratio Excluding Mumbai (2010)				
Sr. No.	District	Population	Nurses	Nurses Per Lakh
1	2	3	4	5
1	Aurangabad	3695928	1020	27.6
2	Beed	2585962	611	23.6
3	Hingoli	1178973	210	17.8
4	Jalna	1958483	402	20.5
5	Latur	2455543	499	20.3
6	Nanded	3356566	729	21.7
7	Osmanabad	1660311	431	26.0
8	Parbhani	1835982	491	26.7
Marathwada		18727748	4393	23.5
9	Akola	1818617	566	31.1
10	Amravati	2887826	955	33.1
11	Bhandara	1198810	380	31.7
12	Buldhana	2588039	686	26.5
13	Chandrapur	2194262	729	33.2
14	Gadchiroli	1071795	637	59.4
15	Gondia	1322331	747	56.5
16	Nagpur	4653171	2277	48.9
17	Wardha	1296157	560	43.2
18	Washim	1196714	358	29.9
19	Yavatmal	2775457	761	27.4
Vidarbha		23003179	8656	37.6
20	Ahmednagar	4543083	865	19.0
21	Dhule	2048781	564	27.5
22	Jalgaon	4224442	967	22.9
23	Kolhapur	3874015	1161	30.0
24	Nandurbar	1646177	355	21.6
25	Nashik	6109052	1777	29.1
26	Pune	9426959	2353	25.0
27	Raigad	2635394	591	22.4
28	Ratnngiri	1612672	598	37.1
29	Sangli	2820575	993	35.2
30	Satara	3003922	837	27.9
31	Sindhudurg	848868	469	55.3
32	Solapur	4315527	497	11.5
33	Thane	11054131	1995	18.1
Rest of Maharashtra		58163598	14022	24.1
Maharashtra		99894525	27071	27.1

Source : Maharashtra Nursing Council, Mumbai

Hospital Beds Per Lakh Population (2010-11)

Sr. No.	District	Beds Per Lakh
1	2	3
1	Aurangabad	194
2	Jalna	161
3	Parbhani	88
4	Hingoli	63
5	Nanded	80
6	Beed	223
7	Latur	105
8	Osmanabad	70
Marathwada		133
9	Akola	151
10	Amaravati	168
11	Bhandara	135
12	Buldhana	81
13	Chandrapur	107
14	Gadchiroli	46
15	Gondia	48
16	Nagpur	204
17	Wardha	113
18	Washim	44
19	Yavatmal	71
Vidarbha		156
20	Ahmednagar	152
21	Dhule	83
22	Jalgaon	133
23	Kolhapur	86
24	Mumbai	332
25	Nandurbar	84
26	Nashik	193
27	Pune	235
28	Raigad	217
29	Ratnagiri	189
30	Sangli	162
31	Satara	101
32	Sindhudurg	219
33	Solapur	119
34	Thane	144
Rest of Maharashtra		207
Maharashtra		184

Source : Maharashtra Pollution Control Board and The Directorate of Eco. And Statistics, GoM

Annex 11.25

Ante-natal Care (2007-08)

Sr. No.	District	Full Check-up (%)	Number
1	2	3	4
1	Aurangabad	14.1	369
2	Beed	16.0	338
3	Hingoli	21.9	371
4	Jalna	28.6	362
5	Latur	27.6	391
6	Nanded	26.2	323
7	Osmanabad	27.2	317
8	Parbhani	34.0	364
Marathwada		24.5	2835
9	Akola	31.0	282
10	Amravati	38.3	258
11	Bhandara	47.4	252
12	Buldana	27.7	297
13	Chandrapur	38.3	238
14	Gadchiroli	43.0	473
15	Gondia	44.3	271
16	Nagpur	44.9	201
17	Wardha	36.1	236
18	Washim	23.0	344
19	Yavatmal	28.7	369
Vidarbha		36.1	3221
20	Ahmednagar	55.0	281
21	Dhule	25.7	331
22	Jalgaon	29.3	297
23	Kolhapur	37.4	267
24	Mumbai City	42.7	232
25	Mumbai (Suburban)	33.4	233
26	Nandurbar	24.3	384
27	Nashik	39.3	296
28	Pune	52.7	245
29	Raigad	30.8	197
30	Ratnagiri	37.2	209
31	Sangli	49.7	228
32	Satara	55.5	258
33	Sindhudurg	47.2	186
34	Solapur	32.4	268
35	Thane	41.5	288
Rest of Maharashtra		38.8	4200
Maharashtra (15-44)		33.9	10247
Maharashtra (15-49)		33.9	10256

Proportion of Institutional Deliveries

Sr. No.	District	DLHS-3	HMIS-2012
1	2	3	4
1	Aurangabad	54.8	95.2
2	Beed	53.0	97.5
3	Hingoli	35.1	89.0
4	Jalna	51.3	93.8
5	Latur	51.2	97.2
6	Nanded	39.3	93.5
7	Osmanabad	46.7	96.2
8	Parbhani	45.9	84.2
Marathwada		35.1-54.8	94.0
9	Akola	58.9	96.4
10	Amravati	56.4	91.3
11	Bhandara	40.8	96.8
12	Buldana	44.1	83.1
13	Chandrapur	41.5	93.9
14	Gadchiroli	20.5	86.0
15	Gondia	36.7	96.4
16	Nagpur	73.1	99.2
17	Wardha	64.2	99.5
18	Washim	52.5	92.1
19	Yavatmal	53.1	93.7
Vidarbha		20.5-73.1	93.4
20	Ahmednagar	65.8	96.6
21	Dhule	38.0	87.6
22	Jalgaon	51.7	91.8
23	Kolhapur	76.5	97.7
24	Mumbai City	86.3	-
25	Mumbai (Suburban)	89.1	-
26	Nandurbar	28.5	55.6
27	Nashik	47.2	84.3
28	Pune	79.2	97.9
29	Raigad	63.4	89.3
30	Ratnagiri	68.9	98.4
31	Sangli	74.1	99.6
32	Satara	73.5	98.7
33	Sindhudurg	83.7	99.8
34	Solapur	64.7	98.0
35	Thane	68.4	95.0
Rest of Maharashtra		28.5-89.1	93.3
Maharashtra		57.9	93.5

Source : DLHS-3, and MIS of the Health Dept.

Annex 11.27

Percentage of Immunized Children

Sr. No.	District	Fully immunized*	Fully immunized**
1	2	3	4
1	Aurangabad	61.8	95.5
2	Beed	75.7	105.2
3	Hingoli	52.2	108.6
4	Jalna	68.5	84.6
5	Latur	71.6	75.6
6	Nanded	72.3	90.3
7	Osmanabad	66.0	73.8
8	Parbhani	71.6	95.0
	Marathwada	67.5*	90.1
9	Akola	72.6	78.2
10	Amaravati	61.8	91.4
11	Bhandara	72.2	97.6
12	Buldhana	73.8	129.6
13	Chandrapur	75.4	98.1
14	Gadchiroli	46.4	86.2
15	Gondia	87.8	92.4
16	Nagpur	90.5	155.6
17	Wardha	84.1	85.3
18	Washim	68.2	92.2
19	Yavatmal	68.8	113.5
	Vidarbha	69.7*	106.7
20	Ahmednagar	85.3	90.8
21	Dhule	35.0	73.0
22	Jalgaon	52.1	86.5
23	Kolhapur	76.8	92.3
24	Mumbai City	76.7	100.5
25	Mumbai (Suburban)	84.7	
26	Nandurbar	17.0	101.3
27	Nashik	68.0	103.0
28	Pune	86.1	108.0
29	Raigad	77.8	81.4
30	Ratnagiri	81.0	82.0
31	Sangli	87.5	91.8
32	Satara	92.0	91.3
33	Sindhudurg	84.4	83.2
34	Solapur	84.0	112.4
35	Thane	73.6	114.6
	Rest of Maharashtra	69.3*	98.5
	Maharashtra	69.1	98.4

Source: * Rough Population Weighted Estimate, DLHS-3 Maharashtra,

**HMIS 2011-2012

Unmet Need for Family Welfare (2007-08)

Sr. No.	District	Spacing	Limiting	Total
1	2	3	4	5
1	Aurangabad	6.7	10.9	17.6
2	Beed	5.3	8.1	13.4
3	Hingoli	6.6	5.8	12.4
4	Jalna	9.0	10.1	19.1
5	Latur	8.3	7.2	15.5
6	Nanded	5.9	9.0	14.9
7	Osmanabad	5.6	6.8	12.4
8	Parbhani	8.9	9.2	18.1
	Marathwada	7.1	8.4	15.4
9	Akola	3.9	7.2	11.1
10	Amravati	4.8	4.9	9.7
11	Bhandara	5.5	4.6	10.1
12	Buldana	7.1	7.3	14.4
13	Chandrapur	6.6	3.8	10.4
14	Gadchiroli	6.3	7.6	13.9
15	Gondia	6.0	4.8	10.8
16	Nagpur	3.8	8.2	12.0
17	Wardha	3.7	2.5	6.2
18	Washim	6.3	6.7	13.0
19	Yavatmal	6.5	6.0	12.5
	Vidarbha	5.6	5.9	11.4
20	Ahmednagar	5.5	6.8	12.3
21	Dhule	4.6	3.8	8.4
22	Jalgaon	4.0	7.3	11.3
23	Kolhapur	5.2	6.2	11.4
24	Mumbai City	4.9	15.3	20.2
25	Mumbai (Suburban)	5.4	15.5	20.9
26	Nandurbar	6.3	10.0	16.3
27	Nashik	4.9	6.7	11.6
28	Pune	4.5	6.5	11.0
29	Raigad	6.7	8.3	15.0
30	Ratnagiri	7.4	13.2	20.6
31	Sangli	5.5	4.3	9.8
32	Satara	4.9	5.7	10.6
33	Sindhudurg	5.6	11.8	17.4
34	Solapur	3.9	5.8	9.7
35	Thane	5.2	11.9	17.1
	Rest of Maharashtra	5.2	8.5	13.7
	Maharashtra (15-49)	5.9	7.7	13.6
	Maharashtra (15-44)	6.3	7.9	14.2

Source : DLHS-3

Annex 11.29

Health Status Score of Districts in Three Regions (Excluding Mumbai)							
Sr. No.	District	IMR *	Tb.@	Malnutrition #	TFR # \$	Total Score (400)	Distance From The Mean of The Highest 3 Districts (302.7)
1	2	% Score	% Score	% Score	% Score	7	8
1	Aurangabad	60.3	23.2	43.1	64.0	190.6	112.1
2	Beed	63.6	11.9	56.2	62.4	194.1	108.6
3	Hingoli	53.7	26.1	40.4	59.3	179.5	123.2
4	Jalna	55.9	23.0	51.9	59.1	189.9	112.8
5	Latur	55.5	23.1	76.0	61.9	216.5	86.2
6	Nanded	60.2	16.7	61.3	61.9	200.1	102.6
7	Osmanabad	56.1	21.2	48.8	69.9	196.0	106.7
8	Parbhani	52.2	14.6	50.6	66.4	183.8	118.9
Marathwada							108.9
9	Akola	69.3	18.1	47.2	67.6	202.2	100.5
10	Amravati	43.5	10.0	24.4	82.0	159.9	142.8
11	Bhandara	49.6	15.5	53.4	82.0	200.5	102.2
12	Buldhana	58.3	12.0	32.5	49.7	152.5	150.2
13	Chandrapur	36.7	11.2	36.8	94.2	178.9	123.8
14	Gadchiroli	42.5	8.4	19.2	81.1	151.2	151.5
15	Gondia	44.8	13.8	41.4	65.2	165.2	137.5
16	Nagpur	60.4	16.3	39.2	84.9	200.8	101.9
17	Wardha	51.6	16.7	39.6	73.7	181.6	121.1
18	Washim	61.5	12.4	41.9	67.9	183.7	119.0
19	Yavatmal	50.4	35.5	43.2	84.4	213.5	89.2
Vidarbha							121.8
20	Ahmednagar	68.1	25.1	61.2	70.2	224.6	78.1
21	Dhule	56.0	19.2	34.0	70.2	179.4	123.3
22	Jalgaon	47.7	46.2	47.5	82.0	223.4	79.3
23	Kolhapur	92.9	45.3	45.0	83.0	266.2	36.5
24	Nandurbar	46.6	16.2	13.6	53.5	129.9	172.8
25	Nashik	62.4	33.3	27.0	66.4	189.1	113.6
26	Pune	86.6	19.8	58.0	72.6	237.0	65.7
27	Raigad	70.0	27.7	92.4	83.0	273.1	29.6
28	Ratnagiri	100.0	100.0	40.6	99.3	339.9	-37.2
29	Sangli	82.1	44.8	100.0	68.2	295.1	7.6
30	Satara	90.1	20.7	52.8	78.5	242.1	60.6
31	Sindhudurg	74.2	26.2	32.6	100.0	233.0	69.7
32	Solapur	79.1	60.6	46.8	68.2	254.7	48.0
33	Thane	70.1	14.2	29.6	66.4	180.3	122.4
Rest of Maharashtra							69.3

Average score of the 3 highest districts : 302.7

* Derived from DLHS-3

@ DLHS-2

Monthly Progressive Report March 2012 Rajmata Jijau Mother-Child Health and Nutrition Mission

\$ Survey of Causes of Death (Rural)

Financing Universal Healthcare in Maharashtra

Dr. Nachiket Mor

Introduction

While the total expenditure on healthcare in the country is about 4.1% of GDP, India spends only about 25% of this (or 1% of GDP) from government resources; the rest is met by families and individuals seeking health care on an out-of-pocket-at-point-of-service basis. The HLEG has estimated that in order to provide universal healthcare this number has to go up to 3% if UHC has to be offered (recent research suggests numbers closer to 3.8% of GDP) at a national level. The Planning Commission's Twelfth Plan document indicates that between the Centre and the States only 1.87% will be made available by the end of the plan period (2017) with the Centre providing 33% of this total. There is additionally some concern that even if the Centre is able to provide for its share of this expenditure not all the States would be able to do so.

On an absolute basis the HLEG has estimated that between an Rs.1,500 to Rs.2,000 per capita would be required to deliver Universal Health Care. While all State Governments, including Maharashtra, allocate an equally small proportion of their resources to healthcare on account of the very sharp differences in the GSDP levels between States the absolute amounts being spent on healthcare by 2019-20, even if no changes are made in the allocation patterns, are expected to range from a low of Rs.356 in Bihar to a high of Rs.1,355 in Maharashtra. The surprising result of these large differences is that, despite a low priority being placed on healthcare even within Maharashtra, in an absolute sense it is likely to have sufficient resources to offer universal healthcare to its entire population. It is important there be a strong emphasis on universality so that: (a) the very vulnerable middle-class is not left out and receives the benefit of pre-payment even if it has to pay an additional surcharge on income or on salary to bridge the gap; (b) the benefits of the performance pressure that such patients can bring to bear is available to the low-income population; and (c) a large, parallel, apparently superior, fee-for-service health system does not evolve for the middle class which is envied by those receiving care within the universal healthcare system.

Universal Healthcare

The State needs a universal healthcare scheme that delivers on the entitlement of every resident of the State to receive a good package of health care which includes:

- a. A strong emphasis on a very broad range of preventive, promotive, and curative care at the Sub-Centre and Primary-Health-Centre level combining both broad-passive- curative efforts with targeted –active-preventive-early-treatment measures; with more than 70% of the total healthcare investment going at this level.
- b. Strict gatekeeping at the sub-centre level for all higher levels of care with an effort to ensure that more than 95% of the patients are fully cared for at this level and only a small number are required to seek higher levels of care;

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- c. Adequate supply of higher levels of care.
- d. Strong performance pressure at all levels of the health delivery system, driven both by vertical (internal, hierarchical) as well as horizontal (demand side, community based) accountability mechanisms such as capitation payments, purchaser-provider splits and / or independent regulatory mechanisms; and regular health outcomes assessments at the population level by the government.
- e. A complete absence of any user fees, co-pays, or deductibles, at all levels with strong gatekeeping at the sub-centre level being used to ensure that there is rational and controlled use of higher levels of care.
- f. Free universal availability of all essential drugs in both public as well as privately owned facilities including pharmacies.
- g. Strong cost control measures using district-level-capitation payments so that the entire healthcare system participates in the risks as well as rewards of poorly / well run systems and works actively to address the burden of disease.
- h. A strong emphasis on universality so that the very vulnerable middle-class is not left out and receives the benefit of pre-payment even if it has to pay an additional surcharge on income or on salary; the benefits of the performance pressure that such patients can bring to bear is available to the low-income population; and a large, parallel, apparently superior, fee-for-service health system does not evolve for the middle class which is envied by those receiving care within the universal healthcare system.

As mentioned earlier, there appears to be real doubt if there is indeed room in either the State or the Central budgets for the enhanced levels of expenditure required for such a system and, even if the money were to become available, bringing about all these changes is likely to take a great deal of time. However, Maharashtra is in a much better position to offer these services to its citizens on account of the fact that even at existing levels it is likely to have sufficient resources to do so. At the present time, the Maharashtra government seem to be facing two, potentially competing, choices:

- a. Strengthening of the health delivery infrastructure at all levels, but particularly at the sub-centre; public health centre; and the community health centre levels – made extremely difficult given the severe shortage of funds and the non-availability of trained manpower.
- b. Roll-out of State level insurance schemes for secondary and tertiary care, using either insurance companies or public trusts to discharge the function of purchasing healthcare, using resources provided to them by the government.

Starting with these two, there are actually several permutations and combinations that present themselves as choices in front of the State government as they think about the way forward for themselves. These include maintaining the status quo; rolling back the insurance schemes; or merging the state owned delivery apparatus into the insurance schemes. The following paragraphs discuss each of these options in some detail.

Maintain Status Quo

Maintaining status quo implies a pathway in which both these schemes with some variations are pursued independently of each other with each being funded from a different part of the budget and being managed by a different ministry. The potential benefit of such a plan would be that citizens are able to access hospital facilities in both the private and the public sector as they wish. This allows them to benefit from the available supply of private hospitals and introduces a measure of accountability in the public hospitals and “double funding” which could be used to strengthen these facilities as well act as a performance incentive for the physicians and other members of the team. Primary healthcare and government hospitals would continue to see improvements as and when funds become available from their part of the budget.

The key downside is that given the large unaddressed burden of disease on the ground, over a period of time, the usage of secondary care facilities would be much higher than was desirable or affordable by us as a country and potentially tax resources that could have been used to strengthen primary care provision would get spent to support more hospital infrastructure thus further exacerbating the problem of the already high levels of secondary and tertiary healthcare expenditure. Over the medium term this entire process would lead to an irreversible situation in which “excess” hospital capacity would be created with, at least in relative terms, an increasingly underfunded and underperforming primary healthcare infrastructure not getting an adequate amount of resources and thus not able to bring down the burden of disease.

The insurance schemes are perceived to be very effectively addressing the immediate financial protection challenges associated with the high costs of hospitalisation in India and are therefore seen by the political establishment as very popular and enjoy a great deal of support. An under-funded primary care network is struggling to cope even with basic goals relating to the delivery of children and is unable to address any other health concerns and is therefore seen not to be very popular. An uncoordinated approach towards growing both these schemes would also serve to exacerbate this problem to the detriment of the health levels of the entire population.

Roll Back All Insurance Schemes and their Budgets into State Healthcare Budgets

Rolling back all the insurance schemes is potentially another option in front of the government and is also the preferred position of the HLEG. In this even the extra money from RSBY would be made available to the state health ministry to continue to invest in public healthcare systems and in contracting-in the services of the private sector where it was felt that the public sector did not have adequate capacity. Under this option it is still possible that there could be private sector provision but the model of quality control would be through Administrative (or Vertical) Accountability.

The anxiety here is that in a severely under-funded healthcare system any incremental amounts of money added to the budget would simply get absorbed within the system without necessarily any results becoming visible. As a consequence there appears to be an explicit political desire to partition the two pools of funds so that immediate relief and financial protection may be provided to the citizens for their hospitalisation expenses and access to an adequate level of hospital facilities from the private sector. There is also the concern that the ability of health ministries to contract-in secondary and

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tertiary care facilities is weak and that it would be best to set up independent purchasers such as Trusts or Insurance Companies to do this on behalf of the government so that the added level of skills and ability to exert control on expenditures that these entities bring, would be available to the government.

Roll the State Healthcare Budgets into the Insurance Schemes

Rolling the State health budgets into the Insurance framework is yet another alternative that is available. As in the case of Thailand the funds could be transferred to a Trust or the services of one or more insurance companies could be employed to “purchase” or “commission” healthcare services from the ministry of health or the private sector. This would be akin to the classic “purchaser-provider” split that has underpinned many of the successful Universal Health Care (UHC) schemes around the world, including Thailand. The benefit of such an approach would be that entire infrastructure of primary, secondary, and tertiary care would be available potentially on an integrated basis and the scheme would then require only those with integrated infrastructures to bid for participation – this is the Thai model. One of the suggested solutions under this option is to create Healthcare Social Enterprises which would be integrated networks of primary, secondary, and tertiary care which would be paid on a capitation basis. In many ways this approach is preferred to the fragmented purchasing of secondary and tertiary care and the HLEG took the view that if indeed insurance as a purchasing route had to be pursued (i.e., purchaser-provider splits fully implemented) this would also be their recommendation. Under this option it is still possible that there could be public sector provision but the model of quality control would be through Customer (or Horizontal) Accountability.

However, this approach is fraught with many risks and was clearly not the preferred choice of the HLEG. Despite the global view that this could result in substantial improvements in the quality of care provided by both public and private provider and would prove to be cost effective, in the Indian context the HLEG did not favour this model for the delivery of UHC for several reasons. A very high level of monitoring would be needed by the purchaser to ensure that the terms of contract are being met. This would require both human capacity and a very high level of expenditure. Hospital based expenditures are potentially controllable through DRG style payment structures and for primary care or entire networks through capitation style payments. However, issues such as quality of care that is provided, and denial of appropriate levels care by networks that are paid on a capitation basis are serious concerns that need a high level of supervision. In the absence of these levels supervision there are very real dangers of mismanagement and “capture” of the system by the providers and it is not at all clear that the governmental and regulatory apparatus would in a position to exercise this level of oversight. And, much of the infrastructure for primary care needs to be constructed and given the paucity of resources that will be available even under the UHC framework the networks that are created on the ground would be in the nature of monopolies and national interest may be better served if these networks are in public hands.

Conclusion

It is clear from the earlier debate that maintaining status-quo is not a desirable option for Maharashtra. Instead the recommendation would be to:

1. Carefully make a choice between using Supply side methods (administrative accountability within the State apparatus) or Demand side methods (customer accountability and competitive forces) to control the quality of provision of healthcare. As has been pointed out earlier, the HLEG has strongly recommended using Supply side methods to control quality of provision within healthcare. However most of the countries that have proceeded towards Universal Healthcare have favoured Demand side methods. Based on the answer to this question one of the two “pure” options discussed earlier would suggest themselves.
2. Once the answer to the above question is clear Maharashtra would need to roll back all fragmented Insurance schemes. If it wishes to go with Demand side accountability then with the help of insurance companies or Trusts or directly from the ministries of health, contract with integrated networks or Health Social Enterprises to purchase care on a capitation basis. If on the other hand they preferred Supply side accountability then they would proceed as outlined in the HLEG document.
3. In either case the State would need to ensure that 70% of the healthcare expenditure is reserved for primary care.
4. Impose a requirement on all tax payers to pay a health protection surcharge. The proceeds from this surcharge would go to pay for extending the coverage of health insurance to the non-BPL populations. This surcharge in the medium-term could then be pooled to contribute the additional sums needed to fund the UHC.
5. Introduce formal licensing of hospitals based on a CON (Certificate of Need) process and a national set of norms so that “excess” supply does not build up in the system.
6. Use the purchasing power of the Government or the Trust and tools such as Aadhar put in place strong quality control measures:
 - a. Universal usage of EHRs in hospitals and in all the levels of facilities within the entire system.
 - b. Development of a national Quality Index which would be based on performance of hospitals on issues such as readmission rates, CLABSI rates, and five-year event-free survival rates.



Annex 12.1

Literacy Rates 2001 and 2011

Sr. No.	District	Literacy Rate (%)				
		2001 (7+)	2001 (15-59)	2011 (7+) Persons	2011 (7+) Males	2011 (7+) Females
1	2	3	4	5	6	7
1	Mumbai City	86.4	86.8	88.5	90.5	86.0
2	Mumbai Sub	86.9	86.8	90.9	94.3	86.9
3	Thane	80.7	80.0	86.2	90.9	80.8
4	Raigad	77.0	77.6	83.9	90.7	76.8
5	Ratnagiri	75.1	77.8	82.4	91.4	74.6
6	Sindhudurg	80.3	84.1	86.5	93.7	79.7
7	Nashik	74.4	74.1	81.0	88.0	73.4
8	Dhule	71.7	71.9	74.6	82.6	66.2
9	Nandurbar	55.8	51.8	63.0	72.0	53.9
10	Jalgaon	75.4	76.0	79.7	88.0	70.9
11	Ahmednagar	75.3	76.5	80.2	88.8	71.2
12	Pune	80.5	81.3	87.2	92.7	81.1
13	Satara	78.2	80.8	84.2	92.1	76.3
14	Sangli	76.6	78.7	82.6	90.4	74.7
15	Solapur	71.3	70.7	77.7	86.4	68.6
16	Kolhapur	76.9	78.4	82.9	91.3	74.2
17	Aurangabad	72.9	72.6	80.4	89.3	70.8
18	Jalna	64.4	62.4	73.6	85.3	61.3
19	Parbhani	66.1	64.4	75.2	85.7	64.3
20	Hingoli	66.3	64.7	76.0	86.7	64.7
21	Beed	68.0	67.7	73.5	84.0	62.3
22	Nanded	67.8	66.5	76.9	86.6	66.7
23	Osmanabad	69.0	70.2	76.3	85.3	66.7
24	Latur	71.5	72.4	79.0	87.4	70.0
25	Buldhana	75.8	76.8	82.1	90.7	73.0
26	Akola	81.4	83.3	87.6	92.9	81.9
27	Washim	73.4	73.6	81.7	90.5	72.3
28	Amravati	82.5	85.0	88.2	92.7	83.5
29	Yavatmal	73.6	74.4	80.7	88.6	72.4
30	Wardha	80.1	84.1	87.2	92.3	81.9
31	Nagpur	84.0	86.3	89.5	93.8	85.1
32	Bhandara	78.5	80.3	85.1	93.2	77.0
33	Gondia	78.5	79.7	85.4	93.5	77.3
34	Chandrapur	73.2	73.9	81.4	88.7	73.7
35	Gadchiroli	60.1	55.9	70.6	80.2	60.7
Maharashtra		76.9	77.7	82.9	89.8	75.5

Source: Census data

Drop Out Rates in Standard V, VII and X

Sr. No.	District	Enrollment in Class I	Enrollment in Class V	Enrollment in Class VII	Enrollment in Class X	Drop Out Rate		
		2001	2005	2007	2010	Std. I - V	Std. I - VII	Std. I - X
1	2	3	4	5	6	7	8	9
1	Mumbai & Mumbai suburban	218145	208637	183308	145194	4.4	16.0	33.4
2	Thane	186808	174850	155376	123163	6.4	16.8	34.1
3	Raigad	60014	48611	42918	35070	19.0	28.5	41.6
4	Ratnagiri	34221	35660	32095	26163	-4.2	6.2	23.6
5	Sindhudurg	15730	15621	14807	13330	0.7	5.9	15.3
6	Nashik	122388	114871	99978	77403	6.1	18.3	36.8
7	Dhule	51728	37757	33995	26005	27.0	34.3	49.7
8	Nandurbar	38536	25769	21992	17820	33.1	42.9	53.8
9	Jalgaon	92955	77899	70385	54676	16.2	24.3	41.2
10	Ahmednagar	101720	84266	78406	64715	17.2	22.9	36.4
11	Pune	148903	152370	110623	110362	-2.3	25.7	25.9
12	Satara	56984	53748	51424	43418	5.7	9.8	23.8
13	Sangli	57556	51312	46484	39539	10.9	19.2	31.3
14	Solapur	100946	86561	78735	60237	14.3	22.0	40.3
15	Kolhapur	72314	67574	66403	57060	6.6	8.2	21.1
16	Aurangabad	85899	77123	56800	53306	10.2	33.9	37.9
17	Jalna	45807	36853	30745	22879	19.6	32.9	50.1
18	Parbhani	49488	37061	31913	21144	25.1	35.5	57.3
19	Hingoli	30157	27318	19771	12539	9.4	34.4	58.4
20	Beed	74558	54775	50495	35778	26.5	32.3	52.0
21	Nanded	95681	67941	54828	35839	29.0	42.7	62.5
22	Osmanabad	39915	32249	29039	21921	19.2	27.3	45.1
23	Latur	73768	55776	51470	37170	24.4	30.2	49.6
24	Buldhana	56268	49573	45437	35534	11.9	19.3	36.9
25	Akola	36408	32029	30960	25355	12.0	15.0	30.4
26	Washim	26564	30328	18172	16452	-14.2	31.6	38.1
27	Amravati	59791	60962	50477	41504	-2.0	15.6	30.6
28	Yavatmal	66976	50171	45008	34776	25.1	32.8	48.1
29	Wardha	24660	26257	22084	18789	-6.5	10.5	23.8
30	Nagpur	91212	84326	79210	65720	7.6	13.2	28.0
31	Bhandara	25176	24236	22461	20734	3.7	10.8	17.6
32	Gondia	28881	26212	25137	22803	9.2	13.0	21.0
33	Chandrapur	46851	35479	38452	33671	24.3	17.9	28.1
34	Gadchiroli	25872	21476	19344	15469	17.0	25.2	40.2
Maharashtra		2342880	2065651	1808732	1465538	11.8	22.8	37.5

Source: Directorate of Education GoM, Pune

Annex 12.3

Students Not Completing the Cycle of School Education, 2011

Sr. No.	District	Students Enrolled in Class I	Students Registered for 10th Exam	Students Appearing for Std. X Exam as % of Those Enrolled in Std. I (10 years ago)	Percent of Students Who Enroll in Schools But Do Not Appear for Public Exam SSC
		2001	Mar-2011	2011	2011
1	2	3	4	5	6
1	Mumbai & Mumbai Suburban	218145	171487	78.6	21.4
2	Thane	186808	144094	77.1	22.9
3	Raigad	60014	40302	67.2	32.9
4	Ratnagiri	34221	27757	81.1	18.9
5	Sindhudurg	15730	14319	91.0	9.0
6	Nashik	122388	85065	69.5	30.5
7	Dhule	51728	27804	53.8	46.3
8	Nandurbar	38536	18419	47.8	52.2
9	Jalgaon	92955	58413	62.8	37.2
10	Ahmednagar	101720	68643	67.5	32.5
11	Pune	148903	125676	84.4	15.6
12	Satara	56984	48873	85.8	14.2
13	Sangli	57556	44770	77.8	22.2
14	Solapur	100946	66351	65.7	34.3
15	Kolhapur	72314	63183	87.4	12.6
16	Aurangabad	85899	56575	65.9	34.1
17	Jalna	45807	24457	53.4	46.6
18	Parbhani	49488	24354	49.2	50.8
19	Hingoli	30157	15193	50.4	49.6
20	Beed	74558	38544	51.7	48.3
21	Nanded	95681	43432	45.4	54.6
22	Osmanabad	39915	26122	65.4	34.6
23	Latur	73768	41583	56.4	43.6
24	Buldhana	56268	37747	67.1	32.9
25	Akola	36408	27550	75.7	24.3
26	Washim	26564	17341	65.3	34.7
27	Amravati	59791	45020	75.3	24.7
28	Yavatmal	66976	37366	55.8	44.2
29	Wardha	24660	21897	88.8	11.2
30	Nagpur	91212	74823	82.0	18.0
31	Bhandara	25176	22769	90.4	9.6
32	Gondia	28881	24929	86.3	13.7
33	Chandrapur	46851	36879	78.7	21.3
34	Gadchiroli	25872	16367	63.3	36.7
Maharashtra		2342880	1638104	69.9	30.1

Source: For Col 3-Directorate of Education, GoM, Pune and For col 4- S.S.C. Board, Pune

Gender Gap in Education							
Sr. No.	District	Literacy Rate 2011 (7+)	Enrollment (2010-11)		Completing Schooling (2010-11)	Average Score	Rank
			Primary	Upper Primary			
1	2	3	4	5	6	7	8
1	Mumbai City	4.5	8.2	8.9	29.8	12.8	1
2	Mumbai Suburb	7.4	4.1	1.1	29.8	10.6	13
3	Thane	10.1	6.1	6.9	5.1	7.0	25
4	Raigad	13.9	4.6	5.5	9.1	8.3	22
5	Ratnagiri	16.9	2.9	3.5	8.8	8.0	23
6	Sindhudurg	14.0	3.7	3.9	4.2	6.4	28
7	Nashik	14.6	6.0	6.6	10.1	9.4	18
8	Dhule	16.4	7.0	8.9	11.5	11.0	12
9	Nandurbar	18.1	4.9	6.0	7.9	9.2	19
10	Jalgaon	17.1	8.6	9.1	9.8	11.1	8
11	Ahmednagar	17.7	8.8	8.7	-7.8	6.8	26
12	Pune	11.6	6.9	7.3	7.5	8.3	21
13	Satara	15.8	7.0	8.1	13.2	11.0	10
14	Sangli	15.7	8.2	9.0	11.6	11.1	9
15	Solapur	17.8	5.9	6.5	13.7	11.0	11
16	Kolhapur	17.2	8.8	10.3	11.6	12.0	5
17	Aurangabad	18.5	4.2	5.9	9.9	9.6	17
18	Jalna	24.0	4.4	6.0	14.4	12.2	3
19	Parbhani	21.4	4.8	6.4	14.1	11.7	6
20	Hingoli	22.0	4.0	4.9	15.4	11.6	7
21	Beed	21.7	6.3	6.6	15.5	12.5	2
22	Nanded	19.9	3.5	3.0	8.2	8.7	20
23	Osmanabad	18.6	6.2	5.6	9.5	10.0	16
24	Latur	17.4	6.1	8.6	15.9	12.0	4
25	Buldhana	17.7	7.1	6.0	10.2	10.3	15
26	Akola	11.0	4.2	4.1	6.1	6.3	29
27	Washim	18.3	5.5	5.2	13.0	10.5	14
28	Amravati	9.2	4.2	3.2	0.3	4.2	32
29	Yavatmal	16.2	4.9	5.2	2.3	7.2	24
30	Wardha	10.4	4.6	3.9	-3.3	3.9	33
31	Nagpur	8.7	4.3	3.3	-4.6	2.9	35
32	Bhandara	16.2	3.1	2.9	-3.9	4.6	31
33	Gondia	16.2	2.6	2.1	-5.6	3.8	34
34	Chandrapur	15.1	4.5	4.5	-3.8	5.0	30
35	Gadchiroli	19.6	3.5	4.2	-0.4	6.7	27
Maharashtra		14.3	5.8	6.4	10.0	9.1	

Note: Gender Gap in literacy rate: Percentage difference of males and females in literacy rate,

Gender gap in enrolment : Percentage difference of boys and girls in enrolment,

Gender Gap in completing education cycle, Percentage difference between boys and girls appearing for SSC examination as a percent of enrolment 10 years ago in class 1. Data has been adjusted for Mumbai and Mumbai suburban.

Source: Children in Maharashtra An Atlas, GoM and Unicef, Directorate of Economics and Statistics, GoM

Annex 12.5

Students Registered for Std. X Exam and Intake Capacity of ITI

Sr. No.	District	Intake capacity of ITI (2010)			Students Registered 10th Exam ('Mar-2011)	Students/ITI Seats (2010-11)
		Government	Private	Total		
1	2	3	4	5	6	7
1	Mumbai City	2508	676	3184	41314	13.0
2	Mumbai Suburb	2144	1072	3216	130173	40.5
3	Thane	6740	1092	7832	144094	18.4
4	Raigad	3813	348	4161	40302	9.7
5	Ratnagiri	2400	584	2984	27757	9.3
6	Sindhudurg	2224	28	2252	14319	6.4
7	Nashik	5853	2788	8641	85065	9.8
8	Dhule	2180	416	2596	27804	10.7
9	Nandurbar	1900	468	2368	18419	7.8
10	Jalgaon	4232	4632	8864	58413	6.6
11	Ahmednagar	3760	3168	6928	68643	9.9
12	Pune	6941	6952	13893	125676	9.1
13	Satara	3920	588	4508	48873	10.8
14	Sangli	2800	1572	4372	44770	10.2
15	Solapur	3732	2124	5856	66351	11.3
16	Kolhapur	3640	2896	6536	63183	9.7
17	Aurangabad	2765	352	3117	56575	18.2
18	Jalna	2264	84	2348	24457	10.4
19	Parbhani	2280	84	2364	24354	10.3
20	Hingoli	964	140	1104	15193	13.8
21	Beed	2588	720	3308	38544	11.7
22	Nanded	4416	740	5156	43432	8.4
23	Osmanabad	2280	524	2804	26122	9.3
24	Latur	3184	108	3292	41583	12.6
25	Buldhana	3364	200	3564	37747	10.6
26	Akola	2692	144	2836	27550	9.7
27	Washim	1184	0	1184	17341	14.7
28	Amravati	4773	900	5673	45020	7.9
29	Yavatmal	3928	280	4208	37366	8.9
30	Wardha	1664	864	2528	21897	8.7
31	Nagpur	5409	4276	9685	74823	7.7
32	Bhandara	1872	692	2564	22769	8.9
33	Gondia	2032	212	2244	24929	11.1
34	Chandrapur	4388	1220	5608	36879	6.6
35	Gadchiroli	2932	0	2932	16367	5.6
Maharashtra		113766	40944	154710	1638104	10.6

Regional Intake in Higher Education (2010)

Sr. No.	University	Total Intake Capacity	Total Enrollment in First Year	Students Appearing in Std. X Examination (2011)	Students Per Seat in Higher Education (5/3)
1	2	3	4	5	6
1	Mumbai	30084	26984		
	SNDT Mumbai	13540	10688		
	Mumbai region	43624		171487	3.9
2	Pune	28933	26971		
	Solapur	5170	6155		
	Shivaji, Kolhapur	14393	12756		
	Pune region	48496		348853	7.2
3	BA Univ, Aurangabad	18100	15486		
	Nanded	2240	1887		
	Marathwada	20340		270260	14.9
4	Amravati	16311	11075		
	RTM Nagpur	33658	20188		
	Vidarbha	49969		362688	7.3
5	Jalgaon	15860	13885	189701	12.0
	Northern Maharashtra				

Higher Education Includes Science, Commerce, Arts, Law, Education and Other Streams

Annex 12.7

Students Per Engineering Seat (2010-11)						
Sr. No.	District	Intake Capacity in Engineering		Total Intake Capacity	Students Registered for Std. X Examination	Students Per Engineering Seat
		Degree	Diploma	2010-11	Mar-2011	2010-11
1	2	3	4	5	6	7
1	Mumbai City	4837	5905	10742	41314	3.9
2	Mumbai Sub	3090	460	3550	130173	36.7
3	Thane	6850	4110	10960	144094	13.2
4	Raigad	4570	6327	10897	40302	3.7
5	Ratnagiri	1365	1320	2685	27757	10.3
6	Sindhudurg	360	620	980	14319	14.6
7	Nashik	5140	9280	14420	85065	5.9
8	Dhule	1590	1790	3380	27804	8.2
9	Nandurbar	690	960	1650	18419	11.2
10	Jalgaon	3540	5140	8680	58413	6.7
11	Ahmednagar	3180	8080	11260	68643	6.1
12	Pune	23745	16005	39750	125676	3.2
13	Satara	2310	7110	9420	48873	5.2
14	Sangli	2910	5020	7930	44770	5.7
15	Solapur	4470	6680	11150	66351	6.0
16	Kolhapur	4800	6580	11380	63183	5.6
17	Aurangabad	4980	4825	9805	56575	5.8
18	Jalna	330	1050	1380	24457	17.7
19	Parbhani	300	1860	2160	24354	11.3
20	Hingoli	600	540	1140	15193	13.3
21	Beed	950	2730	3680	38544	10.5
22	Nanded	1230	2840	4070	43432	10.7
23	Osmanabad	1050	1120	2170	26122	12.0
24	Latur	1320	3740	5060	41583	8.2
25	Buldhana	1680	1440	3120	37747	12.1
26	Akola	610	940	1550	27550	17.8
27	Washim	300	780	1080	17341	16.1
28	Amravati	3840	3500	7340	45020	6.1
29	Yavatmal	1620	2085	3705	37366	10.1
30	Wardha	2880	3520	6400	21897	3.4
31	Nagpur	16049	12125	28174	74823	2.7
32	Bhandara	660	1620	2280	22769	10.0
33	Gondia	480	1200	1680	24929	14.8
34	Chandrapur	1400	3470	4870	36879	7.6
35	Gadchiroli	240	300	540	16367	30.3
Maharashtra		113966	135072	249038	1638104	6.6

Students Per Medical Seat (2011)

Sr. No.	District	Allopathy		All Other Medical Education		Total		No. of Students Registered for 10th Exam	Students Per Medical Seat
		Institutions	Capacity	Institutions	Capacity	Institutions	Capacity		
1	2	3	4	5	6	7	8	9	10
1	Mumbai City	6	750	34	1680	40	2430	171487	
2	Mumbai Sub	0	0	6	320	6	120	171487	
Mumbai Region		750	2000			2550		171487	229
3	Thane	1	60	5	225	6	285	144094	
4	Raigad	0	0	1	50	1	50	40302	
5	Ratnagiri	0	0	6	310	6	310	27757	
6	Sindhudurg	0	0	3	130	3	130	14319	
Konkan		60	715			775		226472	3775
7	Nashik	1	120	15	860	16	980	85065	
8	Dhule	2	150	8	423	10	573	27804	
9	Nandurbar	0	0	1	50	1	50	18419	
10	Jalgaon	1	100	8	376	9	476	58413	
11	Ahmednagar	1	100	14	860	15	960	68643	
Northern Maharashtra		470	2569					258344	550
12	Pune	4	540	37	1905	41	2445	125676	
13	Satara	0	0	4	240	4	240	48873	
14	Sangli	1	100	8	398	9	498	44770	
15	Solapur	1	100	7	341	8	441	66351	
16	Kolhapur	1	100	11	670	12	770	63183	
Pune Region		840						348853	415
17	Aurangabad	1	150	19	1175	20	1325	56575	
18	Jalna	0	0	1	50	1	50	24457	
19	Parbhani	0	0	4	220	4	220	24354	
20	Hingoli	0	0	1	50	1	50	15193	
21	Beed	1	50	5	350	6	400	38544	
22	Nanded	1	50	3	163	4	213	43432	
23	Osmanabad	0	0	2	90	2	90	26122	
24	Latur	2	200	7	416	9	616	41583	
Marthwada		450						270260	601

Students Per Medical Seat (2011)

Sr. No.	District	Allopathy		All Other Medical Education		Total		No. of Students Registered for 10th Exam (Mar-2011)	Students Per Medical Seat
		Institutions	Capacity	Institutions	Capacity	Institutions	Capacity		
1	2	3	4	5	6	7	8	9	10
25	Buldhana	0	0	3	180	3	180	37747	
26	Akola	1	100	7	338	8	438	27550	
27	Washim	0	0	2	100	2	100	17341	
28	Amravati	1	100	5	295	6	395	45020	
29	Yavatmal	1	100	4	203	5	303	37366	
30	Wardha	1	65	2	60	3	125	21897	
31	Nagpur	3	450	20	1123	23	1573	74823	
32	Bhandara	0	0	0	0	0	0	22769	
33	Gondia	0	0	2	100	2	100	24929	
34	Chandrapur	0	0	2	100	2	100	36879	
35	Gadchiroli	0	0	0	0	0	0	16367	
Vidarbha		815						362688	445
Maharashtra		31	3385	257	13851	288	17236	2913520	861

Note: Other medical education includes ayurvedic, dentistry, homeopathy and other medical education.
Source: Directorate of Higher and Technical Education, GoM

Education Backwardness Measure (EBM), 2011

Sr. No.	District	Literacy Rate 7+	Backlog Score	Students Appearing for Std. X Examination	Backlog Score	Completing Std. VII as % of Std. 1	Backlog Scores	Sum of Backlog Score	EBM	Rank
		Percent		Percent		Percent				
1	2	3	4	5	6	7	8	9	10	11
1	Mumbai	89.7	0.0	78.6	0.1	84.0	0.1	0.2	0.08	26,27
2	Mumbai sub	89.7	0.0	78.6	0.1	84.0	0.1	0.2	0.08	26,27
3	Thane	86.2	0.0	77.1	0.2	83.2	0.1	0.3	0.10	23
4	Raigad	83.9	0.1	67.2	0.3	71.5	0.2	0.6	0.19	16
5	Ratnagiri	82.4	0.1	81.1	0.1	93.8	0.0	0.2	0.06	28
6	Sindhudurg	86.5	0.0	91.0	0.0	94.1	0.0	0.0	0.01	35
7	Nashik	81.0	0.1	69.5	0.2	81.7	0.1	0.5	0.16	19
8	Dhule	74.6	0.2	53.8	0.4	65.7	0.3	0.9	0.29	6 or 7
9	Nandurbar	63.0	0.3	47.8	0.5	57.1	0.4	1.2	0.39	1
10	Jalgaon	79.7	0.1	62.8	0.3	75.7	0.2	0.6	0.21	14
11	Ahmednagar	80.2	0.1	67.5	0.3	77.1	0.2	0.6	0.18	17
12	Pune	87.2	0.0	84.4	0.1	74.3	0.2	0.3	0.10	22
13	Satara	84.2	0.1	85.8	0.1	90.2	0.0	0.2	0.05	31
14	Sangli	82.6	0.1	77.8	0.2	80.8	0.1	0.4	0.12	20
15	Solapur	77.7	0.1	65.7	0.3	78.0	0.2	0.6	0.19	15
16	Kolhapur	82.9	0.1	87.4	0.0	91.8	0.0	0.1	0.05	32
17	Aurangabad	80.4	0.1	65.9	0.3	66.1	0.3	0.7	0.23	11
18	Jalna	73.6	0.2	53.4	0.4	67.1	0.3	0.9	0.29	6 or 7
19	Parbhani	75.2	0.2	49.2	0.5	64.5	0.3	0.9	0.31	3
20	Hingoli	76.0	0.2	50.4	0.5	65.6	0.3	0.9	0.30	4
21	Beed	73.5	0.2	51.7	0.4	67.7	0.3	0.9	0.30	5
22	Nanded	76.9	0.1	45.4	0.5	57.3	0.4	1.0	0.34	2
23	Osmanabad	76.3	0.2	65.4	0.3	72.8	0.2	0.7	0.22	12
24	Latur	79.0	0.1	56.4	0.4	69.8	0.3	0.8	0.25	9
25	Buldhana	82.1	0.1	67.1	0.3	80.8	0.1	0.5	0.16	18
26	Akola	87.6	0.0	75.7	0.2	85.0	0.1	0.3	0.10	25
27	Washim	81.7	0.1	65.3	0.3	68.4	0.3	0.7	0.22	13
28	Amravati	88.2	0.0	75.3	0.2	84.4	0.1	0.3	0.10	24
29	Yavatmal	80.7	0.1	55.8	0.4	67.2	0.3	0.8	0.26	8
30	Wardha	87.2	0.0	88.8	0.0	89.6	0.1	0.1	0.03	34
31	Nagpur	89.5	0.0	82.0	0.1	86.8	0.1	0.2	0.06	29
32	Bhandara	85.1	0.1	90.4	0.0	89.2	0.1	0.1	0.04	33
33	Gondia	85.4	0.1	86.3	0.1	87.0	0.1	0.2	0.06	30
34	Chandrapur	81.4	0.1	78.7	0.1	82.1	0.1	0.4	0.12	21
35	Gadchiroli	70.6	0.2	63.3	0.3	74.8	0.2	0.7	0.24	10
Maharashtra		82.9	0.1	69.9	0.2	77.2	0.2	0.5	0.16	

Annex 12.10

Indicators Reflecting Status of Women

Sr. No.	District	Literacy Rate 7+ (2011) (Percent)			Gender Gap in Enrolment, 2010-11 (Percent)		Child Sex Ratio (2011)	Girls Age at Marriage (2007-08)	Percent Marry < 18 Years (2007-08)	Safe Deliveries (2007-08) (Percent)	Toilets Within Household (2001)
		Male	Female	Gap	Primary	Upper Primary					
1	2	3	4	5	6	7	8	9	10	11	12
1	Mumbai	90.5	86.0	4.5	8.2	8.9	874	22.2	9.2	93.5	43.6
2	Mumbai Suburban	94.3	86.9	7.4	4.1	1.1	910	21.7	8.8	95.3	43.6
3	Thane	90.9	80.8	10.1	6.1	6.9	918	20.0	18.4	73.2	55.5
4	Raigad	90.7	76.8	13.9	4.6	5.5	924	20.6	5.8	75.1	33.1
5	Ratnagiri	91.4	74.6	16.9	2.9	3.5	940	21.4	1.9	76.7	28.4
6	Sindhudurg	93.7	79.7	14.0	3.7	3.9	910	23.5	0.0	94.0	32.2
7	Nashik	88.0	73.4	14.6	6.0	6.6	882	18.9	22.4	68.8	30.8
8	Dhule	82.6	66.2	16.4	7.0	8.9	876	18.9	14.6	59.4	21.3
9	Nandurbar	72.0	53.9	18.1	4.9	6.0	932	18.9	26.6	34.0	20.3
10	Jalgaon	88.0	70.9	17.1	8.6	9.1	829	19.1	20.7	65.2	26.6
11	Ahmednagar	88.8	71.2	17.7	8.8	8.7	839	19.0	14.2	87.2	22.5
12	Pune	92.7	81.1	11.6	6.9	7.3	873	19.7	17.3	87.9	46.4
13	Satara	92.1	76.3	15.8	7.0	8.1	881	19.9	7.7	90.9	24.2
14	Sangli	90.4	74.7	15.7	8.2	9.0	862	19.2	15.0	78.9	32.8
15	Solapur	86.4	68.6	17.8	5.9	6.5	872	18.8	20.4	73.4	21.4
16	Kolhapur	91.3	74.2	17.2	8.8	10.3	845	19.0	16.9	92.6	37.7
17	Aurangabad	89.3	70.8	18.5	4.2	5.9	848	18.1	37.8	76.0	38.7
18	Jalna	85.3	61.3	24.0	4.4	6.0	847	17.9	31.6	71.5	18.9
19	Parbhani	85.7	64.3	21.4	4.8	6.4	866	18.0	27.7	70.2	25.5
20	Hingoli	86.7	64.7	22.0	4.0	4.9	868	17.6	39.1	47.3	15.9
21	Beed	84.0	62.3	21.7	6.3	6.6	801	17.9	34.2	69.7	16.8
22	Nanded	86.6	66.7	19.9	3.5	3.0	897	18.1	31.5	61.4	24.4
23	Osmanabad	85.3	66.7	18.6	6.2	5.6	853	18.1	28.5	69.1	22.9
24	Latur	87.4	70.0	17.4	6.1	8.6	872	18.1	31.3	71.4	23.9
25	Buldhana	90.7	73.0	17.7	7.1	6.0	842	18.8	17.4	70.4	22.8
26	Akola	92.9	81.9	11.0	4.2	4.1	900	19.8	7.4	78.4	38.3
27	Washim	90.5	72.3	18.3	5.5	5.2	859	18.8	23.8	72.0	19.1
28	Amravati	92.7	83.5	9.2	4.2	3.2	927	20.3	10.1	65.9	43.3
29	Yavatmal	88.6	72.4	16.2	4.9	5.2	915	19.4	10.5	59.4	23.1
30	Wardha	92.3	81.9	10.4	4.6	3.9	916	21.0	0.0	83.3	40.9
31	Nagpur	93.8	85.1	8.7	4.3	3.3	926	22.1	1.2	84.4	60.8
32	Bhandara	93.2	77.0	16.2	3.1	2.9	939	20.1	1.7	70.3	35.5
33	Gondia	93.5	77.3	16.2	2.6	2.1	944	20.8	2.6	62.8	26.2
34	Chandrapur	88.7	73.7	15.1	4.5	4.5	945	20.4	2.1	59.9	32.5
35	Gadchiroli	80.2	60.7	19.6	3.5	4.2	956	19.7	9.5	34.6	18.8
Maharashtra		89.8	75.5	14.3	5.8	6.4	883	19.3	17.6	69.2	35.1

Notes: Literacy Rate: Percentage of literates to population of age 7 and above.

Gender Gap in Enrolment: Percentage difference of boys and girls enrolment.

Child Sex Ratio: Females in age group 0-6 per 1000 males in same age group.

Safe Deliveries: Either institutional or home deliveries attended by skilled health personnel.

Source: Planning Department, GoM and Unicef, 2012, Children in Maharashtra – An Atlas of Social Indicators.



Annex 13.1

Road Length Status							
(Length in Km.)							
Sr. No.	District	National Highway (NH)		State Highway (SH)*		Major District Road (MDR)	
		Total linear length	Single lane-wise length	Total linear length	Single lane-wise length	Total linear length	Single lane-wise length
1	2	3	4	5	6	7	8
1	Mumbai	0	0	49	196	0	0
2	Thane	322	1086	1147	1677	938	1116
3	Raged	232	605	1265	1822	639	674
4	Ratnagiri	275	523	857	1063	1423	1444
5	Sindhudurg	108	205	719	874	1007	1007
	Mumbai Region	937	2419	4037	5631	4007	4240
6	Pune	427	1309	1372	1997	2975	3280
7	Satara	113	452	1015	1504	2232	2676
8	Sangli.	30	120	968	1593	2199	2452
9	Kolhapur	110	291	893	1427	1619	2064
10	Solapur	163	310	1572	2833	3015	3284
	Pune Region	843	2481	5820	9353	12040	13754
11	Ahmednagar	201	382	1875	2975	2890	3482
12	Nashik	235	688	1690	2209	2255	2393
13	Dhule	250	542	707	972	886	938
14	Nandurbar	45	86	666	935	1095	1162
15	Jalgaon	187	344	1356	1863	1797	2283
	Nashik Region	918	2042	6294	8955	8923	10258
	Rest of Maharashtra	2698	6942	16151	23939	24970	28252
16	Aurangabad	136	258	1258	1890	2900	3136
17	Jalana	22	42	1287	1582	1339	1559
18	Parbhani	77	146	653	868	1060	1145
19	Hingoli	30	57	527	697	871	988
20	Nanded	130	239	1339	1868	2802	2836
21	Beed	193	355	1197	1968	1644	1757
22	Osmanabad	207	393	926	1393	1432	1541
23	Latur	0	0	886	1430	1548	1746
	Marathwada	795	1491	8073	11696	13596	14707
24	Buldhana	86	210	984	1553	1223	1304
25	Akola	100	211	561	857	636	705
26	Washim	0	0	631	985	649	700
27	Amaravati	76	144	1459	2309	1539	1626
28	Yavatmal	65	187	1427	2208	1341	1754
	Amaravati Region	327	752	5062	7912	5388	6090
29	Wardha	108	205	663	919	706	730
30	Nagpur	289	831	1094	1745	1128	1425
31	Bhandara	68	150	440	635	632	676
32	Gondia	34	136	401	561	777	839
33	Chandrapur	0	0	877	1430	1566	1716
34	Gadchiroli	57	105	1342	1905	1173	1259
	Nagpur Region	556	1427	4817	7195	5982	6646
	Vidarbha	883	2178	9879	15106	11370	12736
	Maharashtra	4376	10611	34103	50741	49936	55695

Source: Public Works Department, GoM

* State Highway Includes Length of Expressway (EW) and Major State Highway (MSH).

Status of Existing District Roads (As on 31.3.2011)

(Length in Km.)

Sr. No.	District	Other District Road (ODR)		Village Road (VR)	
		Total Linear Length	Single Lane wise Length	Total Linear Length	Single Lane wise Length
1	2	3	4	5	6
1	Mumbai	0	0	0	0
2	Thane	1215	1215	3540	3540
3	Raged	796	796	2437	2437
4	Ratnagiri	1384	1384	3384	3384
5	Sindhudurg	1077	1077	3270	3270
	Mumbai Region	4472	4472	12631	12631
6	Pune	2611	2611	6691	6691
7	Satara	1890	2850	4797	4800
8	Sangli.	2810	2819	3023	3208
9	Kolhapur	2110	2113	2675	2689
10	Solapur	2135	2135	6447	6452
	Pune Region	11556	12528	23633	23839
11	Ahmednagar	3350	4006	4572	4575
12	Nashik	2400	2568	7594	7594
13	Dhule	935	1157	2660	2660
14	Nandurbar	693	693	2173	2173
15	Jalgaon	1863	2421	4875	4875
	Nashik Region	9241	10845	21874	21877
	Rest of Maharashtra	25269	27845	58138	58347
16	Aurangabad	1299	1299	4230	4230
17	Jalana	817	817	1209	1209
18	Parbhani	740	740	2107	2107
19	Hingoli	514	514	1238	1238
20	Nanded	1334	1334	4597	4597
21	Beed	1443	1554	4968	4968
22	Osmanabad	1270	1366	1968	1968
23	Latur	1348	1390	1922	1922
	Marathwada	8765	9014	22239	22239
24	Buldhana	1149	1221	1297	1297
25	Akola	555	555	970	970
26	Washim	600	600	1290	1290
27	Amaravati	1158	1158	2466	2466
28	Yavatmal	1697	1697	2796	2796
	Amaravati Region	5159	5231	8819	8819
29	Wardha	709	719	1857	1857
30	Nagpur	1578	1813	3819	3824
31	Bhandara	959	1079	2500	2500
32	Gondia	1347	1557	2990	2990
33	Chandrapur	1705	2149	3452	3452
34	Gadchiroli	1406	2213	2586	2586
	Nagpur Region	7704	9529	17204	17209
	Vidarbha	12863	14760	26023	26028
	Maharashtra	46897	51618	106400	106614

Source: Public Works Department, GoM

October 7, 2013

To: The Chairman

High Level Committee on Alternative Approaches to Balanced Regional Development, GoM

Sub.: Recommendations of the H. L. Kelkar Committee on Alternative Approaches of Balanced Regional Development

Dear Dr. Kelkar

I have received the final chapters of the Committee report and I appreciate the hard work put in by the Drafting Committee in giving final shape to these chapters. I also deeply appreciate the enormous efforts you have made to bring about unanimity in the approach and recommendations made by the Committee. However, unfortunately I am forced to give this discordant note for which I feel quite embarrassed.

Given my domain knowledge, I have read carefully the chapters on Education as well as the Policy Approach chapter and I find that I am not in full agreement with certain contents in these chapters (4 and 12). In particular, I have reservations pertaining to the chapter on Education for which I had written the background paper. Through several communications and in various discussions, I had brought my reservations to your notice. In the final report many of my suggestions have been ignored and certain new matters had been added which I do not agree with. Some of the recommendations relating to the Policy Approach are against my convictions as elaborated in this Note. Hence, I am constrained to put my reservations on record as we come to the final stages of the Committee's work. As advised, please find attached my *Note on Reservations on the Recommendations of the High Level Kelkar Committee on Alternative Approaches to Balanced Regional Development Report* which may be placed appropriately in the Report.

Regards

SangitaKamdar

Note on Reservations on the Recommendations of the High Level Kelkar Committee on Alternative Approaches to Balanced regional Development Report

by

Dr. Sangita Kamdar, Member

1. The proposed Development Deficit Index (DDI)

The report recommends that regional imbalance is to be removed through 'equalization of access to public goods'. A Development Deficit Index (DDI) has been mooted which identifies 5 public goods as education, health, connectivity, credit and electricity for this purpose. Out of these, credit availability and power cannot be looked upon as public goods and their provisioning cannot be looked upon as entirely state responsibility particularly taking into account the increasing presence of the private sector along with the Central Government sector in generation and distribution of electricity and the absence of any meaningful control of the State government on the banking sector. Rather drinking water and sanitation should have been listed in the list of public goods.

To my mind even the construction of the DDI is faulty. The DDI proposes a mix of parameters as diverse as input indicators like infrastructure (connectivity) and outcome indicators like literacy rates. The indicator 'number of students registered for SSC' does not make sense as by itself it does not signify any developmental imbalance. 'Average intake capacity of ITI' also does not make sense. The health index also has a mix of various input and output indicators. The 'outcomes' approach of the Committee is thereby, negated.

The 'average of the top 3 districts' to calculate distance and hence developmental deficit would mean that regional imbalance will not be wiped out as there will be a perennial chase after the ever shifting benchmarks. In a way, it is a modified Dandekar Committee approach only.

Calculating and understanding the Development Deficit is very complex and is another matter of concern. The Report does not illustrate the construction of the DDI and its implications for allocation of funds across districts. It is left to somebody else to work out the details including possibly district level computations. The methodology given is so complex that it will be difficult to work out reliable district wise developmental deficit for each area/component/parameter. Hence, I find it difficult to accept the DDI as proposed for computation of financial allocations.

2. Proposed Governance Index

A Governance Index has been mooted and has been left to Yashada for working out the modalities and methodology for constructing the index. Leaving such complex work of construction of a complicated index on which very little research work at micro level (district, taluka etc) has been done, to a state level training institution is not a reasonable and practical proposition.

3. Regional Development Boards (RDBs)

In the chapter on Governance, there are recommendations pertaining to strengthening of the Regional Development Boards (RDB). In effect these recommendations mean creating 4 Regional Planning Boards instead of one State Planning Board which to my mind is not in the interests of the State as one political entity. I do not agree with this recommendation for enormously strengthening RDB and making them a permanent feature as it will violate the present 3 tier system of devolution of power namely the State, the District and the Village/ Gram Panchayats which has been provided by the 72nd, 73rd and 74th amendments. Besides the RDBs are meant to be a temporary feature as per the Constitution and accountable only to the Governor. Making the Chief Minister the Chairman of the RDBs would make him accountable only to the Governor for implementation of the development plans rather than to the State legislature. This to my mind will violate the basic democratic structure. Besides this, the allocation of funds from the RDBs and the Blocks to the districts will complicate the process of plan implementation.

4. The Education Development Measure (EDM)

The outcomes approach has in fact not been fully used to recommend resource allocation for removal of regional imbalances. An Education Backwardness Measure (EBM) which represented imbalances in education using 'outcome' indicators including illiteracy rate, drop out at 7th standard and completion of the cycle of education as represented by appearing in public examinations has been discarded in favour of an Education Index. The Education Index uses indicators: pupil teacher ratio, student classroom ratio and the female literacy rate. While, female literacy rate is an outcome indicator the other two indicators are RTE norms and applicable only to primary education. The values derived by the index do not explain backwardness to a layman. The index also does not reflect one of the stated objectives of the Report namely 'completion of Standard X be looked upon as the minimum level of schooling'.

5. Recommendations of the Education chapter

- a. The recommendation that grass root NGOs will have to be recognized and empowered in terms of content and skill delivery. The details are not given. However, content and skill delivery through NGOs as a better option in difficult pockets is an unrealistic assumption. In fact the state delivery mechanism needs to be further strengthened and NGOs can help in extension activities only.
- b. The report seems to condemn the present ITI based system as it stated that 'it provides close-ended and often irrelevant stream of education'. It goes on to say that the report will go on to recommend better institutions for imparting vocational skills and education. What is needed are measures to strengthen and improve ITI s.
- c. As a solution to the poor quality of ITIs, the Report recommends setting up of Community Colleges. Looking at the limited experience of community colleges in India (Community Polytechnics), it is doubtful whether such colleges will deliver better quality vocational and skill education particularly in backward areas. I, therefore have reservations in recommending community colleges as a panacea and setting up one community college in every block until the

full details of the Scheme are worked out and such colleges are operated successfully on a pilot scale.

- d. In para 12.3.2 there is a sweeping statement that the higher education system in Maharashtra is in doldrums. I think such a judgmental statement should not be made. It discusses at length the defects in higher education system and institutions but does not address key issues like quality of teachers and teaching, monitoring performance and accountability of teachers, curriculum up gradation, training and development of faculty and so on.
- e. Professional education should be left to the market and not only management education as recommended by the Report. For underdeveloped areas, the State may give financial and logistical support to the private sector.
- f. The Incentive Based Scheme for Skill Acquisition (IBSSA) wherein vouchers would to be given for skill development in different stages to students enrolled in government approved institutes to enhancing the employability and self-employment of the youth may be questionable in its objective. If the objective is to enhance employability then the vouchers should be given even to those students who are enrolled in institutes in the private sector. Rather than suggest measures for improving the quality of education imparted in government approved institutes, the report advocates an entitlement approach in terms of cash vouchers. I would prefer creating and strengthening institutions with participation of the private sector rather than the entitlement approach adopted by the Report.

6. Setting up of multiple institutions

There is a recommendation to set up a State Statistical Board without clearly defining the role it should perform. The report mentions the various suggested measures to strengthen statistical systems many of which are yet to be implemented. The State and National Statistical Systems have to operate in an integrated manner and the need is to strengthen the existing Directorate of Economics and Statistics and empower it. The report is silent on this. The Report also recommends a large number of institutions like two Tribal Universities, Agriculture and Forestry University, Policy Institutes, Maharashtra Development Research Council, Regional Institutes of Governance, Maharashtra Council of Agricultural Research, Agricultural Colleges for each taluka, Regional Agro- Industries Development Corporations and so on. To me, these are very sweeping recommendations not backed up by adequate study of requirements. Similarly, there is a recommendation to create 8 districts and 100 talukas with majority tribal population. I doubt whether this is within the ToR of the Committee and whether adequate demographic and socio-political analysis has been carried out. I have my reservations on this recommendation.

7. Growth enhancing strategies

The Policy Approach chapter lays greater emphasis on growth enhancing strategies rather than on 'equalization of access to public goods'. These growth enhancing strategies are dispersed in various chapters but these strategies do not offer an integrated and holistic developmental policy for the state as

a whole. They mostly point out the deficiencies in the existing system, which are generally well known. It has been mentioned in several places that removal of regional imbalance is not only the responsibility of the state and that private sector should be encouraged to participate in the development process. However there is hardly any mention of how this is to be brought about.

8. Allocation of resources

There should have been more discussion of the allocation formula and computational procedure inter alia of what constitutes the divisible and non-divisible funds, how the 60:40 ratio was developed, why 30 percent to be reserved for water, why only 7- 8 percent for the four sub-sectors of water- drinking water and sanitation, water conservation, command area development deficit and water conservation, and so on. Some of the formulations are complex and often contradictory. The Report recommends for certain purposes region as the basis of allocation of funds, for others district, and for special problems, taluka as the basis for funds disbursement. The sweep of the recommendations regarding fund allocation between sectors amongst regions with sectoral allocations and then districts along with sectoral allocation and further guidelines for devolution to block level would leave very little flexibility, work and discretion to the Assembly, the State governments and the District Planning Committees.



