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ABBREVIATIONS	
ACF	Assistant Conservator of Forests
AD	Assistant Director
ADG	Additional Director General
AG	Accountant General
AIDS	Acquired Immune Deficiency Syndrome
AMC	Annual Maintenance Contract
ANM	Auxiliary Nurse Midwife
ARO	Asst. Research officer
ASI	Annual Survey of Industries
ASO	Assistant Statistical Officer
ASP	Application Service Provider
AY	Agriculture Year
B&R	Bridges and Roads
BA	Bachelor of Arts
BDO	Block Development Officer
BEO	Block Education Officer
BLI	Block Level Investigator
BOMT	Build Operate Maintain and Transfer
BPL	Below Poverty Line
BSA	Block Statistical Assistant
BSc	Bachelor of Science
BSNL	Bhartat Sanchar Nigam Limited
C of LB's	Contribution of Local Bodies
CC	Crop Cutting
CCE	Crop Cutting Experiments
CCF	Chief Conservator of Forest
CD	Compact Disk
CE (R&B)	Chief Engineer Roads and Bridges
CES	Crop Estimation Survey
CF	Conservator of Forest

ABBREVIATIONS	
CF&S	Capital Formation and Savings
CFC	Consumption of Fixed Capital
CFST	Computer Friendly Services of Transport
CGIAR	Consultative Group on International Agricultural Research
CHC	Community Health Centre
CMO	Chief Medical Officer
CPI	Consumer Price Index
CPO	Chief Planning Officer
CRS	Civil Registration System
CSO	Central Statistical organisation
CSS	Centrally Sponsored Scheme
CY	Calendar Year
DAS	Distributed Annotation System
DAT	Digital Audio Tape
DCF	Deputy Conservator of Forests
DD	Deputy Director
DDP	District Domestic Product
DEO	Data Entry Operator
DEO	District Educational Officers
DES	Directorate of Economics and Statistics
DFO	Divisional Forest Officer
DGHS	Director General of Health Services
DGSSI	Director General of Small Scale Industries
DHO	District Health Officer
DISCOMS	Distribution Companies
DLT	Digital Linear Tape
DME	Directory Manufacturing Establishment
DMP	Digital Manga Publishing
DPD	Data Processing Department

ABBREVIATIONS	
DPO	District Panchayat Officer
DQAF	Data Quality Assessment Framework
DRBD	Deputy Registrar of Births & Deaths
DRDA	District Rural Development Agency
DRTO	Deputy-Regional Transport Office
DSO	District Statistical Office
DTP	Desk Top Publishing
EDP	Electronic Data Processing
EMI	Employment Market Information
EPI	Expanded Programme of Immunisation
ESD	Economics and Statistics Department
ESI	Economics & Statistical Investigator
ESI	Employee State Insurance
EY	Education Year
FAO	Food and Agriculture Organization
FIDAPS	Forest Inventory Data Processing System
FISIM	Financial Intermediation Services Indirectly Measured
FLCS	Forest labour Co-operative Society
FOD	Field Operations Division
FSU	First Stage Unit
FTP	File Transfer Protocol
FY	Fiscal Year
GAD	General Administration Department
GB	Giga Byte
GCES	General Crop Estimation Surveys
GCP	Generation Challenge Programme
GDP	Gross Domestic Product
GFCF	Gross Fixed Capital Formation
GIS	Geographic Information System

ABBREVIATIONS	
GOI	Government of India
GSDP	Gross State Domestic Product
GVA	Gross Value Added
HDD	Hard Disk Drive
HIV	Human immunodeficiency virus
HOD	Head of the Department
HQ	Head Quarter
HRD	Human Resources Development
IBM	International Business Machines
ICD	Integrated Child Development
ICRISAT	International Crops Research Institute for the Semi Arid Tropics
ICS	Improvement of Crop Statistics
IIT	International Institute of Information Technology
IIP	Index of Industrial Production
IMF	International Monetary Fund
IMR	Infant Mortality Rate
Inv	Investigator
IOS	Inspector of Statistics
IP	Industrial Production
IP	In Place
ISI	Indian Statistical Institute
ISSP	India Statistical Strengthening Project
IT	Information Technology
IUD	Intra Uterine Device
JD	Joint Director
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
KBPS	Kilo Bytes Per Second
KM	Kilo Metre
KVA	Kilo Volt Ampere

ABBREVIATIONS	
LAN	Local Area Network
LCD	Liquid Crystal Display
LD	Lower Division
LDC	Lower Division Clerk
MBPS	Mega Bytes Per Second
MCCD	Medical Certification of Cause of Death
MDGs	Millennium Development Goals
MIS	Management Information System
MMR	Maternal Mortality Rate
MOS&PI	Ministry of Statistics and Programme Implementation
MTPs	Medical Termination of Pregnancy
NABARD	National Bank for Agricultural and Rural Development
NAS	Network Attached Storage
NBO	National Buildings Organization
NCERT	National Council of Educational Research and Training
NCERT	National Council of Education Research and Training
NDCUs	Non-Departmental Commercial Undertakings
NDME	Non-Directory Manufactory Establishments
NGO	Non-Government Organization
NHB	National Horticulture Board
NIC	National Informatics Centre
NIFT	National Institute of Fashion Technology
NRDMS	Natural Resources Data Management System
NSC	National Statistical Commission
NSDP	Net State Domestic Product
NSS	National Sample Survey
NSSO	National Sample Survey Organization

ABBREVIATIONS	
NT	Network Technology
OAME	Own Account Manufacturing Establishments
OEM	Original Equipment Manufacturer
OR	Optimum Required
PA	Programme Assistant
PC	Personal Computer
PCCF	Principal Chief Conservator of Forests
PCI	Per Capita Income
PDF	Portable Document Folder
PF	Provident Fund, Protected Forest
PG	Post Graduation
PHC	Primary Health Centres
PHE	Planning Health & Education
PHE	Public Health Engineering
PHED	Public Health Engineering Department
PWD	Public Works Department
R&D	Research and Development
RAID	Redundant Array of Independent Disks
RAM	Random Access Memory
RBD	Registration of Births and Deaths
RCH	Reproductive and Child Health
RD	Rural Development
RDBMS	Relational Data Base Management Systems
RDD	Rural Development Department
RGI	Registrar General of India
RHSDP	Rajasthan Health System Development Project
RNTCP	Revised National TB Control Programme
RO	Range Officer
RO	Research Officer
ROSC	Reports on the Observance of Standards and Codes

ABBREVIATIONS	
RPSC	Rajasthan Public Service Commission
RRTC	Rajasthan Road Transport Corporation
RRVNL	Rajasthan Rajya Vidyut Prasaran Nigam Ltd
RRVUNL	Rajasthan Rajya Vidyut Utpadan Nigam Ltd
RRVVNL	Rajasthan Rajya Vidyut Vitran Nigam Ltd
RTO	Regional Transport Offices
S.S.L.C	Secondary School Living Certificate
SA	Statistical Assistant
SAN	Storage Area Network
SASA	State Agriculture Statistics Authority
SC	Sub Centres, Schedule Caste
SDDS	Special Data Dissemination Standard
SDEO	Sub Divisional Educational Officers
SDM	Sub-divisional Magistrate
SDO	Sub-Divisional Offices
SDP	State Domestic Products
SI	Statistical Inspector
SIS	Sub-Inspector of Statistics
SLMC	State Level Co-ordination Committee
SNA	System of National Accounts
SO	Statistical Officer
SPB	State Planning Board
SPSS	Statistical Package for Social Scientists
SRC	State Roadways Corporation
SRO	Senior Research Officer
SRS	Sample Registration Scheme
SRTC	State Roadways Transport Corporation
SSA	Sarva Shiksha Abhiyan
SSD	Statistics and Survey Division
SSI	Small Scale Industries

ABBREVIATIONS	
ST	Schedule Tribes
TAD	Tribal Area Development
TB	Tuberculosis
TQM	Total Quality Management
TRS	Timely Reporting Scheme
TW	Tribal Welfare
UD	Upper Division
UDC	Upper Division Clerk
UGC	University Grants Commission
UN	United Nations
UPS	Uninterrupted Processing System
UT	Union Territory
VB	Visual Basic
VBA	Visual Basic for Application
VPN	Virtual Private Network
VS	Visual Studio
VSAT	Very Small Aperture Terminal
WAN	Wide Area Network
WHO	World Health Organisation
WPI	Wholesale Price Index

ABBREVIATIONS	
ACF	Assistant Conservator of Forests
AD	Assistant Director
ADG	Additional Director General
AG	Accountant General
AIDS	Acquired Immune Deficiency Syndrome
AMC	Annual Maintenance Contract
ANM	Auxiliary Nurse Midwife
ARO	Asst. Research officer
ASI	Annual Survey of Industries
ASO	Assistant Statistical Officer
ASP	Application Service Provider
AY	Agriculture Year
B&R	Bridges and Roads
BA	Bachelor of Arts
BDO	Block Development Officer
BEO	Block Education Officer
BLI	Block Level Investigator
BOMT	Build Operate Maintain and Transfer
BPL	Below Poverty Line
BSA	Block Statistical Assistant
BSc	Bachelor of Science
BSNL	Bhartat Sanchar Nigam Limited
C of LB's	Contribution of Local Bodies
CC	Crop Cutting
CCE	Crop Cutting Experiments
CCF	Chief Conservator of Forest
CD	Compact Disk
CE (R&B)	Chief Engineer Roads and Bridges
CES	Crop Estimation Survey
CF	Conservator of Forest

ABBREVIATIONS	
CF&S	Capital Formation and Savings
CFC	Consumption of Fixed Capital
CFST	Computer Friendly Services of Transport
CGIAR	Consultative Group on International Agricultural Research
CHC	Community Health Centre
CMO	Chief Medical Officer
CPI	Consumer Price Index
CPO	Chief Planning Officer
CRS	Civil Registration System
CSO	Central Statistical organisation
CSS	Centrally Sponsored Scheme
CY	Calendar Year
DAS	Distributed Annotation System
DAT	Digital Audio Tape
DCF	Deputy Conservator of Forests
DD	Deputy Director
DDP	District Domestic Product
DEO	Data Entry Operator
DEO	District Educational Officers
DES	Directorate of Economics and Statistics
DFO	Divisional Forest Officer
DGHS	Director General of Health Services
DGSSI	Director General of Small Scale Industries
DHO	District Health Officer
DISCOMS	Distribution Companies
DLT	Digital Linear Tape
DME	Directory Manufacturing Establishment
DMP	Digital Manga Publishing
DPD	Data Processing Department

ABBREVIATIONS	
DPO	District Panchayat Officer
DQAF	Data Quality Assessment Framework
DRBD	Deputy Registrar of Births & Deaths
DRDA	District Rural Development Agency
DRTO	Deputy-Regional Transport Office
DSO	District Statistical Office
DTP	Desk Top Publishing
EDP	Electronic Data Processing
EMI	Employment Market Information
EPI	Expanded Programme of Immunisation
ESD	Economics and Statistics Department
ESI	Economics & Statistical Investigator
ESI	Employee State Insurance
EY	Education Year
FAO	Food and Agriculture Organization
FIDAPS	Forest Inventory Data Processing System
FISIM	Financial Intermediation Services Indirectly Measured
FLCS	Forest labour Co-operative Society
FOD	Field Operations Division
FSU	First Stage Unit
FTP	File Transfer Protocol
FY	Fiscal Year
GAD	General Administration Department
GB	Giga Byte
GCES	General Crop Estimation Surveys
GCP	Generation Challenge Programme
GDP	Gross Domestic Product
GFCF	Gross Fixed Capital Formation
GIS	Geographic Information System

ABBREVIATIONS	
GOI	Government of India
GSDP	Gross State Domestic Product
GVA	Gross Value Added
HDD	Hard Disk Drive
HIV	Human immunodeficiency virus
HOD	Head of the Department
HQ	Head Quarter
HRD	Human Resources Development
IBM	International Business Machines
ICD	Integrated Child Development
ICRISAT	International Crops Research Institute for the Semi Arid Tropics
ICS	Improvement of Crop Statistics
IIT	International Institute of Information Technology
IIP	Index of Industrial Production
IMF	International Monetary Fund
IMR	Infant Mortality Rate
Inv	Investigator
IOS	Inspector of Statistics
IP	Industrial Production
IP	In Place
ISI	Indian Statistical Institute
ISSP	India Statistical Strengthening Project
IT	Information Technology
IUD	Intra Uterine Device
JD	Joint Director
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
KBPS	Kilo Bytes Per Second
KM	Kilo Metre
KVA	Kilo Volt Ampere

ABBREVIATIONS	
LAN	Local Area Network
LCD	Liquid Crystal Display
LD	Lower Division
LDC	Lower Division Clerk
MBPS	Mega Bytes Per Second
MCCD	Medical Certification of Cause of Death
MDGs	Millennium Development Goals
MIS	Management Information System
MMR	Maternal Mortality Rate
MOS&PI	Ministry of Statistics and Programme Implementation
MTPs	Medical Termination of Pregnancy
NABARD	National Bank for Agricultural and Rural Development
NAS	Network Attached Storage
NBO	National Buildings Organization
NCERT	National Council of Educational Research and Training
NCERT	National Council of Education Research and Training
NDCUs	Non-Departmental Commercial Undertakings
NDME	Non-Directory Manufactory Establishments
NGO	Non-Government Organization
NHB	National Horticulture Board
NIC	National Informatics Centre
NIFT	National Institute of Fashion Technology
NRDMS	Natural Resources Data Management System
NSC	National Statistical Commission
NSDP	Net State Domestic Product
NSS	National Sample Survey
NSSO	National Sample Survey Organization

ABBREVIATIONS	
NT	Network Technology
OAME	Own Account Manufacturing Establishments
OEM	Original Equipment Manufacturer
OR	Optimum Required
PA	Programme Assistant
PC	Personal Computer
PCCF	Principal Chief Conservator of Forests
PCI	Per Capita Income
PDF	Portable Document Folder
PF	Provident Fund, Protected Forest
PG	Post Graduation
PHC	Primary Health Centres
PHE	Planning Health & Education
PHE	Public Health Engineering
PHED	Public Health Engineering Department
PWD	Public Works Department
R&D	Research and Development
RAID	Redundant Array of Independent Disks
RAM	Random Access Memory
RBD	Registration of Births and Deaths
RCH	Reproductive and Child Health
RD	Rural Development
RDBMS	Relational Data Base Management Systems
RDD	Rural Development Department
RGI	Registrar General of India
RHSDP	Rajasthan Health System Development Project
RNTCP	Revised National TB Control Programme
RO	Range Officer
RO	Research Officer
ROSC	Reports on the Observance of Standards and Codes

ABBREVIATIONS	
RPSC	Rajasthan Public Service Commission
RRTC	Rajasthan Road Transport Corporation
RRVPL	Rajasthan Rajya Vidyut Prasaran Nigam Ltd
RRVUNL	Rajasthan Rajya Vidyut Utpadan Nigam Ltd
RRVVNL	Rajasthan Rajya Vidyut Vitran Nigam Ltd
RTO	Regional Transport Offices
S.S.L.C	Secondary School Living Certificate
SA	Statistical Assistant
SAN	Storage Area Network
SASA	State Agriculture Statistics Authority
SC	Sub Centres, Schedule Caste
SDDS	Special Data Dissemination Standard
SDEO	Sub Divisional Educational Officers
SDM	Sub-divisional Magistrate
SDO	Sub-Divisional Offices
SDP	State Domestic Products
SI	Statistical Inspector
SIS	Sub-Inspector of Statistics
SLMC	State Level Co-ordination Committee
SNA	System of National Accounts
SO	Statistical Officer
SPB	State Planning Board
SPSS	Statistical Package for Social Scientists
SRC	State Roadways Corporation
SRO	Senior Research Officer
SRS	Sample Registration Scheme
SRTC	State Roadways Transport Corporation
SSA	Sarva Shiksha Abhiyan
SSD	Statistics and Survey Division
SSI	Small Scale Industries

ABBREVIATIONS	
ST	Schedule Tribes
TAD	Tribal Area Development
TB	Tuberculosis
TQM	Total Quality Management
TRS	Timely Reporting Scheme
TW	Tribal Welfare
UD	Upper Division
UDC	Upper Division Clerk
UGC	University Grants Commission
UN	United Nations
UPS	Uninterrupted Processing System
UT	Union Territory
VB	Visual Basic
VBA	Visual Basic for Application
VPN	Virtual Private Network
VS	Visual Studio
VSAT	Very Small Aperture Terminal
WAN	Wide Area Network
WHO	World Health Organisation
WPI	Wholesale Price Index

GLOSSARY OF TERMS USED IN THE REPORT

Quality: There is no universally accepted definition of quality for official statistics. We have chosen a broad concept of quality based on fitness for use. In keeping with IMF's Data Quality Framework¹, we have defined quality in terms of the following attributes of data that are pertinent to the use of information: (1) Adequacy; (2) Relevance; (3) Accuracy; (4) Timeliness; (5) Accessibility; (6) Interpretability; (7) Coherence². Some of these attributes such as those in serial numbers 2, 4, 5, 6 and 7 are directly observed by users; others such as, those in serial numbers 1 and 3 can be assessed only by the DES, line departments of state governments, and the primary data generating agencies. Coherence as a definition of quality has been used only where the same sets of data are released by multiple agencies within the statistical system of the state.

Adequacy: This refers to the comprehensiveness of source and other data in terms of the (i) accepted definition of the parameter which is to be statistically investigated and estimated; and (ii) agreed and accepted methodology for estimation.

Coverage: In the context of non-survey related statistical activities, coverage refers to the consistency of the components of data categories with the accepted methodology and statistical framework, which are most important in shedding light on the concerned data category. In the context of surveys, coverage refers to the extent to which the units/sample universe belonging to the target population has been covered.

Relevance: Relevance refers to the extent to which the information produced responds to the needs of the user community that the DES aims to service. While one can speak of the relevance of an individual statistic, relevance is more meaningfully assessed in terms of how well the full repertoire of available information satisfies user needs. Relevance is not a concept that lends itself to precise quantitative measurement. Rather, performance in

¹ For details refer to "Toward a Framework for Assessing Data Quality", IMF Working Paper, WP/01/25, Carson, Carol S., February 2001

² The above breakdown of quality into components is not unique neither invariant over time. Other organisations use slightly different sets of quality dimensions. For instance, Statistics Canada uses six dimensions: relevance, accuracy, timeliness, accessibility, interpretability, and coherence (see "Statistics Canada's Quality Assurance Framework", Catalogue number 12-586-XIE, Statistics Canada, 2002 <http://www.statcan.ca/english/freepub/12-586-XIE/12-586-XIE02001.pdf>); Statistics Sweden uses five: content, accuracy, timeliness, comparability/ coherence, and availability/clarity (see Rosén, B., and Elvers, E., 1999, "Quality Concept for Official Statistics" pp. 621-629 in S. Kotz, C.B. Read, and D.L. Banks eds.), Encyclopedia of Statistical Science, Update Vol. 3, Wiley, New York); the OECD has developed a quality framework with eight components: relevance, accuracy, credibility, timeliness, punctuality, accessibility, interpretability and coherence (see Quality framework for OECD statistics, OECD, Paris, (see www.oecd.org/doc/m00029000/m00029990.doc); and Eurostat uses the criteria of relevance, accuracy, timeliness and punctuality, accessibility and clarity, comparability, and coherence. The use of the term quality has broadened in recent years, largely because of the Total Quality Management (TQM) movement, which has three broad criteria for quality: knowing and understanding the clients' (i.e., users') needs; involving employees in decision-making associated with meeting these needs; and continuously reviewing business processes for reengineering potential.

this domain has to be assessed in terms of processes in place and broadly defined user satisfaction.

Accuracy and Reliability: Accuracy refers to the degree to which data correctly estimate or describe the quantities or characteristics that the statistical activity was designed to measure. Accuracy has many dimensions. Typically, measures of accuracy reflect sources of error in survey processes and or estimation procedures. Source data are obtained from comprehensive data collection programs that take into account state-specific conditions. Accuracy and reliability warrants that the source data adhere to the definitions, scope, classifications, valuation, and time of recording required, and that source data are timely.

Frequency: This refers to the frequency of data collection and compilation. It is expressed in terms of division of the calendar.

Dissemination: Dissemination is the release to users of data/information obtained through a statistical activity through various release media, for example, the Statistical Handbooks of state governments; electronic format including the Internet; a paper publication; a microdata file available to authorized users or for public use; a telephone or facsimile response to a special request; or presentation or television or radio interview.

Periodicity: This refers to the frequency of dissemination of statistics.

Timeliness: This refers to speed of dissemination/release i.e. lapse of time between the end of the reference period and the dissemination of the data. For one-time or ad hoc or new surveys it refers to the interval between the time when the need is made known and the appearance of data.

Accessibility: Accessibility reflects the availability of information from the statistical system. It includes the existence of suitable modes of disseminating information to different users, the availability of list of publications or searching tools that allow users to know what is available and how to obtain it, and the provision of access that is affordable and convenient to different user groups.

Interpretability: Interpretability refers to the ease with which users can understand and properly use and analyze information. It covers the availability of metadata (or information about the data), particularly descriptions of the underlying concepts and definitions used, of the methodology used in compiling the data, and of the accuracy of the data (as described above).

Coherence: Coherence refers to the degree to which data or information from different programs are compatible and can be analyzed together. It is promoted by the use of common, or at least compatible, conceptual frameworks, definitions, classifications, and collection and processing methodologies across programs.

Methodological Soundness: This implies that the methodological basis for the statistics follows nationally and or internationally accepted standards, guidelines, and good practices with respect to:

- Concepts and definitions
- Scope
- Classification/sectorization
- Basis for recording flows and stocks

EXECUTIVE SUMMARY

ES.1 The Project

The Ministry of Statistics and Programme Implementation (MOSPI), Government of India, is implementing World Bank funded India Statistical Strengthening Project (ISSP). The long-term objective of ISSP is to help in implementing the proposal of the National Statistical Commission to “provide, within the decentralized structure of the system, reliable, timely and credible social and economic statistics, to assist decision making within and outside the Government, stimulate research and promote informed debate relating to conditions affecting people’s life”. The project is being taken up in two Tiers – Tier I comprising of exploratory activities and Tier II would comprise of activities that take place over a longer time frame.

The Tier I activities, inter alia, include a study to “**Identify the Specific Requirements for Strengthening of State Statistical Bureaus**”. The study is being conducted in two Phases. The objective of Phase I study is to document the status of data collection, processing and standards followed in each State, to assess the infrastructure and human resources available, and propose a position paper for each State for discussion at an All-India Workshop. A fully costed plan for upgrading each State Office will subsequently be developed by the Ministry of Statistics in Phase II and these plans will be implemented in Tier II of the project.

ES.2 This Report

Rajasthan Report: This report relates to Rajasthan’s statistical system. It is based on a study undertaken by Dr. N.K. Bhatnagar, Group Project Director in Group-II (comprising in addition, Shri B.V.L.N. Rao, the official statistics expert and Shri Ajaydeep Singh IT Expert).

ES.3 Key Findings

Our key findings – technical and managerial/administrative - within the study boundaries defined by the Terms of Reference are summarized below.

ES.3.1 Current Status of Statistical Activities¹

This is given in Table ES.1 below

¹ Refer Chapter 4 for details

Table ES.1: Status of Statistical Activities in Rajasthan

SN	Activity	Agency/ Department Responsible	Base Year where applicable	Frequency of data collection	Periodicity of release of estimates	Year ² for which Data Available as of June 2006	Time Lag in Data Disseminatio n in Months
1	State Domestic product	DES	1993 - 94	Annual	Annual	FY2002-03	12-quick 24-provisional 36-Revised
2	Capital formation	DES	N.A.	Annual	Annual	Dept.: FY2003 – 04 NDCU – 1999- - 2000	Dept – 24 NDCU - 60
3	District Domestic Product	DES	N.A.	Annual	Annual	FY 2002-03	36
4	Contribution of Local Bodies	DES	1993 - 94	Annual	Annual	FY 2002-03	12-quick 24-provisional 36-Revised
5	Major fiscal data	Finance Dept. and DES	N.A.	Monthly	Annual	FY 2005 - 06	<1
6	Annual Survey of Industries	CSO/NSSO/ DES	N.A.	Annual	Annual	FY 2001-02	48
7	IIP	DES	1993-94 ³	Monthly	Monthly	March 2006	3
8	Crop area and production statistics	DES/Board of Revenue	N.A.	Annual	Annual	Area AY2004-05 Production- AY 2004-05	Area-12 Production-12
9	Wholesale Price Index	DES	1999-2000	Monthly	Monthly	January 2006	6
10	Consumer Price Index	Not compiled by the State DES					
11	Health, Morbidity, Mortality and family welfare statistics	Department of Health and Family Welfare	N.A.	Annual	Annual	CY 1999	72
12	Education and Literacy Statistics						
12 A	Institutional	Department of Education	N.A.	Annual	Annual	EY 2003-04	12
12B	Enrolment Data	Department of Education	N.A.	Annual	Annual	EY 2003-04	12
13	Labour and Employment Statistics						
13 A	Labour Statistics	Labour Commissioner	N.A.	Annual	Annual	CY 2001	48
13 B	Employment Statistics	Directorate of Employment & Training	N.A.	Annual	Annual	FY 2002 - 03	24
14.	Housing Statistics	Population Census/ Rajasthan Housing Board	N.A.	Decennial	Decennial	2001	36 months after Pop Census
15	Birth and Death Registration Statistics	DES	N.A.	Monthly / Annual	Annual	CRS: CY1999 SRS: CY2004 MCCD: CY1999	72: CRS 24: SRS 72: MCCD
16	Electricity Production and Distribution Statistics	Department of Power	N.A.	Prod – Daily Distribution-	Annual	FY 2004-05	12

² FY – Fiscal Year ending March; CY-Calendar year ending December; AY – Agriculture Year ending June; EY – Education Year ending September

³ Being revised to 1999-2000

SN	Activity	Agency/ Department Responsible	Base Year where applicable	Frequency of data collection	Periodicity of release of estimates	Year ² for which Data Available as of June 2006	Time Lag in Data Disseminatio n in Months
				Monthly			
17	Environmental Statistics						
17.A	Forestry Statistics	Conservator of Forest	N.A.	Annual	Annual	FY 2004-05	18
17.B	Water Supply and Sanitation Statistics	PHED	N.A.	Annual	Annual	FY 2004-05	12
18	Participation in National Sample Survey	DES/NSSO	N.A.	Annual	Annual	No tabulation done for several years	
19	Transport Statistics						
19.A	Motor Vehicle Registration	Transport Commissioner	N.A.	Monthly / Annual	Annual	May 2006	<1
19.B	Road Length	State PWD	N.A.	Annual	Annual	FY 2005-06	4
19.C	Road Accidents	Police Department	N.A.	Annual	Annual	CY 2004	12
19.D	Passenger and Goods Traffic	Passenger – RRTC	N.A. Not done	Annual	Annual	FY 2003-04	24
20	Statistics for Local Area Planning	DPC/DES	N.A.	Annual	Annual	FY 2002-03	24

ES.3.2 Data Gaps

There are several data gaps. Some of these gaps are given in Table ES.2 below:

Table ES.2: Principal Data Gaps

SN	Statistical Parameter	Data Gaps
1.	GSDP Estimates:	Data gaps with respect to estimation of GSDP are several including: consumer price index; statistics on bye-products of agricultural and livestock products; index of agricultural production; expenditure data on new constructions and repairs of residential buildings; transportation of own products of ancillary activities ⁴ .
2.	Estimate of Capital formation & Savings	Savings are not estimated and data on actual addition to fixed assets not available; it is available only for gross assets, which do not satisfy the definition. The data provided by organizations engaged in mining, construction, and cooperatives are not comprehensive. Further, data base required for physical and financial indicators in many sub-sectors is inadequate, which makes it difficult to use benchmark figures. In a number of cases, data on type of assets is not available, so estimates by type of assets cannot be attempted for the supra-regional and private sectors. Latest data in some of the sectors is not available as a result of which data has to be moved with the help of some suitable indicators.

⁴ Data on unregistered manufacturing sector, agriculture sector, and livestock is available every five years from quinquennial surveys.

SN	Statistical Parameter	Data Gaps
3.	Contribution of Local Bodies	Expenditure of local bodies on outsourced services and activities is not provided by the Local Bodies to DES.
4.	Compilation of Consumer Price Index Numbers	Not compiled
5.	Health, Morbidity and Family Welfare Statistics.	Data is not available on percentage of children fully immunized.
6.	Education and Literacy Statistics	For literacy rates and adult literacy rates, the source is decadal population census. For intermittent years the rates are not available for the State.
7.	Labour and Employment Statistics.	Employment Statistics: Employment data is not available in respect of agriculture and allied occupations in the private sector, and household establishments.
8.	Housing Statistics	Construction activities with respect to rural and semi rural areas are not captured in housing statistics.
9.	Forestry Statistics.	Forestry Statistics: Inadequate data on forest regeneration, social forestry, and consumption/sale of forest produce.
10.	Transport Statistics	No data is generated on several transport related parameters like transport of passengers by private sector transporters, rental of commercial vehicles with operator, maintenance and repair of road transport equipment, supporting services for road transportation services, services auxiliary to all modes of transport, cargo-handling services, storage and warehouse services, among others.

ES.3.3 Data Quality⁵

ES.3.3.1 Methodology for Quality Assessment

There is growing acceptance to the use of the IMF's Data Quality Assessment Framework (DQAF) as a tool for assessing data quality⁶. For the purposes of the present study, an attempt has been made to broadly apply the DQAF methodology – of the five quality dimensions specified in DQAF we have focussed on the accuracy and reliability dimensions⁷.

⁵ Refer chapter 4, table 4.16 for application of methodology for quality assessment

⁶ The IMF works with member countries in carrying out such assessments. Its Reports on the Observance of Standards and Codes (ROSC) have been helpful in identifying areas of strengths and weaknesses. The reviews look at particular aspects of data quality as defined in the DQAF framework. The assessment covers key data series that are of critical importance for sound macro-economic management. Typically, the reviews deal with statistical practices in the areas of the national accounts, prices, government finance, money and banking, and balance of payments statistics. The ROSC reviews also deal with aspects of the institutional environment and organizational dimensions of the statistical regime.

⁷ The five DQAF quality dimensions are accessibility (including timeliness), serviceability, accuracy and reliability, methodological soundness, and assurance of integrity. It needs to be highlighted that here is a

The reliability and accuracy indicators that are prescribed by IMF and used by us for assessment of quality of statistical activities are:

1. Adequate basis of the source/field data to compile statistics in terms of adequacy, comprehensiveness, approximation to definition, and timeliness
2. Regular assessment of source data for coverage, sample error, response error, and non sampling error
3. Use of sound statistical techniques in data compilation and statistical analysis
4. Assessment and validation of intermediate data and statistical outputs.
5. Tracking of revisions

In our quality assessment, we have assigned the highest rank to (1), (2), and (4) above. This may be termed as threshold quality indicators. Three and five above have been assigned low values.

The quality of statistical output has been classified in three qualitative categories – high, medium, and low - in terms of the extent to which the three threshold indicators are satisfied. We have used the following normative scale to assess quality:

High Quality: All the components of the threshold indicators are met plus any one of (3) and/or (5)

Medium Quality: The three threshold indicators are met.

Low Quality: The threshold indicators are not met.

Applicability of IMF – DQAF Standards: Though IMF – DQAF standards are not presently applicable to the state, however, to improve the quality of statistical outputs, it is necessary that the current statistical activities being carried on should be benchmarked against the best practices.

ES.3.3.2 Results of Quality Assessment

The results of our quality assessment for activities that are being carried out by the state are given below⁸; details can be seen in Chapter 4 (Section 4.2).

Table ES.3: Quality of Statistical Activities

STATISTICAL ACTIVITY			
SN	High Quality	Medium Quality	Low Quality
1.	Data on major fiscal variables	State Domestic Product Estimates	Capital Formation and Savings Estimates

trade-off between the different components of quality, especially: timeliness/accuracy, and relevance/accuracy.

⁸ Statistics for Housing has also not been evaluated for quality because the main source of data is decennial census.

STATISTICAL ACTIVITY			
SN	High Quality	Medium Quality	Low Quality
2.	Electricity Production and Distribution	Compilation of IIP	DDP Statistics
3.	Transport Statistics: Vehicle Registration and Road Length Statistics	ASI	Estimates of Contribution of local bodies
4.		Crop Area and Production Estimates	Education: Institutional Statistics Enrollment Statistics
5.		Compilation of WPI	Health, Morbidity and Family Welfare Statistics
6.			Labour Statistics and Employment Statistics
7.			Housing Statistics
8.			Transport: Passenger Traffic Statistics and Statistics on road accidents
9.			Birth and Death Registration Statistics
10.			Forestry Statistics and Water Supply Statistics
11.		Statistics for local area planning.	

ES.3.4 Human Resources⁹

The available and optimum required manpower for each of the twenty core statistical activities is given in table ES.4. It will be seen from the table that:

- Total available manpower is 823 at the DES and Line Departments
- Total Estimated optimum manpower is 952
- Total additional required manpower is 129
- Activities with resource gaps are Health and Family Welfare Statistics and Education and Literacy Statistics
- Activities for which no staff are assessed are recommended are housing statistics, water and sanitation Statistics.¹⁰
- Activities with surplus staff are none.

⁹ For details see Chapter three for available staff and Chapter 7 for optimum staff requirement.

¹⁰ The recommended mode of data collection in case of Housing and Water and Sanitation statistics is adhoc sample surveys

Table ES4: Overview of Available and Optimum Required Staff for Core Statistical Activities in DES and Line Departments

SN	Activity	Available Staff	Optimum Requirement	Staff Resource Gap
1.	SDP, DDP, CF&S, C of LB's	24	24	0
2.	Industrial Statistics – ASI, IIP	18	23	5
3.	Crop Area and Production statistics	41	41	0
4.	Price Statistics – WPI and CPI	9	11	2
5.	Health, Family Welfare	269	354	85
6.	Education and Literacy Statistics	62	64	2
7.	Labour and Employment	5	5	0
8.	Housing Statistics	0	0	0
9.	Registration of Births and Deaths	16	37	21
10.	Forestry	1	7	6
11.	Water and Sanitation Department	0	0	0
12.	Participation of NSSO Surveys	18	23	5
13.	Transport Statistics	8	11	3
14.	Statistics for Local Area Planning	319	319	0
15.	Staff posted across activities	33	33	0
Total		823	952	129

ES.3.5 IT Resources¹¹

The IT resources of DES and line departments are inadequate. The estimated cost of providing the adequate IT infrastructure – hardware, software, connectivity etc is given in Tables ES 5.

Table ES.5 - Total estimated costs for IT Infrastructure for DES and Line Departments

Details	Approximate costs (Rs.)
Requirements of IT - Hardware resources in the DES Head Quarters	2856,000
Requirements of IT - Software resources in the DES Head Quarters	255,000
Requirements of IT – Hardware/ Software resources in the DSO's offices	29248,000
Requirements of IT – Hardware/ Software resources in the Line Departments	965,000
Total	3,33,24,000

ES.3.6 Physical Resources¹²

The physical facilities of DES need to be upgraded through provision of office space, vehicles and IT infrastructure including networking and connectivity. The details are given in Chapter 8. Summary of the costs is listed in the table below

¹¹ For details see Chapter Seven

¹² For details see Chapter 8

Table ES.6: Estimated cost of Additional Physical Facilities

Sl.No	Particulars	Approx unit Cost Rs. Lakhs	Number of Offices/units	Amount in Rs. Lakhs
1.	Building for DSO's	18.50	32	592.00
2.	Vehicles	4.50	34	153.00
3.	Photostat Machines	.80	34	27.20
4.	Water Dispensers	.10	34	3.40
5.	Self-Starting Generator	6.00	1	6.00
6.	Air conditioners	0.25	36	9.00
7.	Office furniture	.50	32	16.00
Total				806.6

IT Infrastructure: This is discussed in chapter 6

ES.3.7 Prioritization of Statistical Activities¹³

ES.3.7.1 Prioritization Criteria

Any prioritization exercise has to be underpinned by well articulated criteria. The current status of prioritization of statistical activities in the state is inferred through resource allocation, using the difference between optimum manpower required and current staff I in place in the state. The Consultant has chosen the criteria of (i) demand for statistical information; and (ii) current quality of statistical output. Using these criteria, we provide two options for prioritization of statistical activities. The rationale for using these criteria and the methodology of our assessment is discussed in this chapter. Prior to the discussion of the assessment of prioritization, the perspective of the State is presented.

ES.3.7.2 Perspective of the State

As perceived by DES and line departments of the State, all the twenty core statistical activities are important and of equal priority as the outputs of each of the twenty statistical activities are critical for both macro and micro management of the state's economy through information and knowledge-based policy making and deciding on policy shifts as required by performance of economic indicators measured through the twenty core statistical activities.

ES.3.8 Inferred Current Priorities

The current priorities of the State vis-à-vis statistical activities of the State, listed in descending order, using the percentage difference between optimum required staff (as estimated in Chapter 7) and staff in place¹⁴ are:

¹³ For details see Chapter 9

¹⁴ 100*(OR-IP)/OR

Priority One

- State Income Statistics
 - a. State Domestic Product Estimates
 - b. Estimate of Capital formation & Savings
 - c. Estimates of District Domestic Product
 - d. Estimates of the contribution of Local Bodies
 - e. Data on major fiscal variables
- Crop Area and Production Statistics
- Labour and Employment
- Statistics for Local Area Planning

Priority Two

- Price Statistics

Priority Three:

- ASI and IIP
- Participation in NSSO Surveys

Priority Four:

- Transport Statistics

Priority Five:

- Education and Literacy Statistics

Priority Six:

- Health, Morbidity and Family Welfare Statistics

Priority Seven:

- Registration of Births and Deaths Statistics

Priority Eight:

- Forestry Statistics

ES.3.9 Demand-based Prioritization

Rationale: There is no gainsaying the fact that statistical information on economic (including agriculture and industry), social (health and education), urban development, and environment (forest, water supply and sanitation) is an essential requirement of policy makers and administrators in the state government for development planning, macro and micro management of the economy, and monitoring of several mission-oriented programmes. Equally important, such statistical information is required by the business community for developing and executing their business plans. And, demand for statistics also emanates from the research community and the international agencies. Also, data on a number of parameters are required for monitoring progress vis-à-vis international programmes like the Millennium Development Goals to which India is a

signatory. In view of the above, we have used demand for statistics as a basis for prioritization.

Methodology: We have inferred the demand-based priorities on the basis of perceived demand (need) for statistics by policy makers, researchers and the business community. The demand (need) perceptions were derived from our consultations with select government officials and on the basis of our *a priori* understanding of need for data for both macro and micro management of the State's economy. The demand (need) for statistics has been categorized by us into high, medium, and low depending upon the criticality of statistics related to a given parameter for policy formulation, development planning, and macro and micro management of the State's economy.

Results: The demand-based prioritization is presented in the table below:

Table ES.7: Demand Based Prioritization of Statistical Activities

SN	High Priority	Medium Priority	Low Priority
1.	State Domestic Product Estimates	Electricity production and distribution Statistics	
2.	Estimate of Capital formation & Savings		
3.	Estimates of District Domestic Product		
4.	Estimates of the contribution of Local Bodies		
5.	Data on major fiscal variables		
6.	Industrial Statistics; ASI, IIP		
7.	Crop Area and Production Statistics		
8.	Compilation of Wholesale Price Index Numbers		
9.	Compilation of Consumer Price Index Numbers		
10.	Health, Morbidity and Family Welfare Statistics		
11.	Education and Literacy Statistics		
12.	Labour and Employment Statistics		
13.	Housing Statistics		
14.	Birth and death registration and population.		
15.	Environment Statistics.		
16.	Water and Sanitation		
17.	Participation in the surveys of National Sample Survey Organisation (NSSO).		
18.	Transport Statistics		
19.	Statistics for local Area Planning		

ES.3.9.3 Quality-based prioritization

Rationale: The rationale for quality-base prioritization is derived from the imperatives of strengthening the overall statistical system of the state through efficient allocation of incremental resources with the caveat that the already high quality statistical activities are not deprived of their resource requirements i.e. low and medium quality statistical activities should not be strengthened at the cost of high quality activities. The emphasis is on strengthening the statistical system as a whole rather than individual statistical activity – holistic rather than the Cartesian partial approach.

Methodology: The quality-based prioritization has been done on the basis of quality assessment of statistical activities using a methodology based on IMF DQAF. The quality of statistical output has been assessed on a normative scale of high, medium, and low. After this we have prioritized the statistical activities by assigning high priority to low quality statistical activities. .

Results: The suggested quality-based prioritization is given in the table below.

Table ES.8: Quality Improvement Based Prioritization

STATISTICAL ACTIVITY			
SN	High Priority	Medium Priority	Low Priority
1.	Capital Formation and Savings Estimates	State Domestic Product Estimates	Data on major fiscal variables
2.	DDP Statistics	Compilation of IIP	Electricity Production and Distribution
3.	Estimates of Contribution of local bodies	ASI	Transport Statistics: Vehicle Registration and Road Length Statistics
4.	Education: Institutional Statistics Enrollment Statistics	Crop Area and Production Estimates	
5.	Health, Morbidity and Family Welfare Statistics	Compilation of WPI	
6.	Labour Statistics and Employment Statistics		
7.	Housing Statistics		
8.	Transport: Passenger Traffic Statistics and Statistics on road accidents		
9.	Birth and Death Registration Statistics		
10.	Forestry Statistics and Water Supply Statistics		
11.	Statistics for local area planning.		

ES.3.10 Key Technical Challenges¹⁵

Some of the key challenges and problems of Rajasthan's Statistical System are indicated in Table ES.8 below:

Table ES 9: Challenges and Problems

CHALLENGE	PROBLEM
Disconnect between data need and resources	<ul style="list-style-type: none">• Rajasthan's statistical system does not have adequate human and financial resources to respond to meet users' increasing needs, for example, environmental, poverty and gender statistics.• Rajasthan's statistical system does not have adequately trained staff.• DSOs have inadequate IT resources
Disconnect between statistical system and information technology	<ul style="list-style-type: none">• Inadequate IT systems, particularly in DSOs• Inadequate computer operators• Inadequate IT skills• Inadequate networking and connectivity
Inadequate coordination between DES, line departments, and other agencies of GoI	<ul style="list-style-type: none">• Response of line departments to request for data by DES is inadequate

ES.3.11 Key Management Challenges

The two key management challenges are:

1. DES is a *de jure* and not a *de facto* Nodal Agency despite it being appropriately empowered by the State Government.
2. Although the Administration Division in the DES, HQ provides a structured mechanism and system for interacting and coordinating its activities with line departments in the State, there are considerable delays in transmission of data to DES. The coordination mechanisms are perhaps not effective.

ES.4 Key Recommendations¹⁶

ES.4.1 Improving Data Quality¹⁷

DES should give priority attention to improving data quality by taking steps to bridge gaps in data; improve the accuracy of source/field data; use computers with relevant software for data compilation, processing and report generation; reducing time lag; strengthening supervision for data collection at field level; instituting mechanisms for data scrutiny and validation, among others.

¹⁵ For details see Chapter 10

¹⁶ See Chapter 10 for details

¹⁷ See Chapter 4 for details on individual activities

ES.4.2 Undertaking New Statistical Activities¹⁸

1. Type Studies
2. Estimation of Savings
3. Compilation of CPI

ES.4.3 Dissemination of Statistics

The following measures are recommended to improve data dissemination:

1. Improvements in coverage, periodicity, and timeliness.
2. Making data easily accessible
3. Introducing electronic mode of data dissemination.
4. In order to reduce the time in printing of statistical publication, the departments may be allowed to engage the services of government approved private printing firms/establishments.
5. Dissemination of technical notes concerning methods, concepts, and data limitations
6. Reaching out to data users, both in the government and the nongovernmental sectors, represents another area requiring attention.

ES.4.4 Providing Adequate Human Resources

The additional manpower required by DES as identified in Chapter 7 should be recruited without much delay.

ES.4.5 Cadre and Recruitment Rules

The State has a common Statistical Cadre governed by the Rajasthan Statistical Service Rules. The Secretary to the Government, Statistics & Planning Department, controls the gazetted cadre while the director of Economics & Statistics controls the non-gazetted cadre under the State Statistical Service Rules.

ES.4.6 Developing Manpower Skills

Having adequate staff is a necessary pre-requisite for improving data quality in terms of adequacy/coverage, accuracy, reliability and timeliness. But this is not a sufficient condition. Generation of quality data requires skilled staff. As noted above, most of the current statistical staff is deficient in statistical skills both at the operational level – methods of data collection, processing and summarisation – and statistical methods to improve the practice of statistics, that is, use of “applicable theoretical techniques”. The latter deficiency is of particular concern as the statistical staff is not fully conversant with “applicable theoretical techniques”. Further, the DES and statistical staff of line departments do not have adequate capabilities to tabulate data on demand and to analyse data from different sources.

¹⁸ See Chapter 9 for details

It is thus imperative for DES to have a detailed training programme to upgrade the staff skills in the two broad areas as given above. Also, periodic refresher training programmes should be periodically conducted for all the officers and staff of DES.

DES should develop a training programme focussed on the following distinctive areas and linked with the on-going and planned statistical activities:

1. Induction training course for all new statistical staff
2. Training for middle level staff
3. Refresher training programmes for all officers
4. Specialized training programmes to develop a core group of specialists who can also serve as trainers
5. Management of Statistical System

ES.4.7 Training in IT

To enhance the IT skills of DES staff, IT training should be provided as indicated in Chapter 6

ES.4.8 Strengthening IT Infrastructure

The current IT resources of DES and line departments are inadequate. On the basis of our assessment of the current IT infrastructure vis-à-vis activity-based need, we have recommended a configuration of hardware and software required DES and the line departments. We recommend that urgent steps be taken by DES and line departments to procure and activate the recommended hardware and software. Simultaneously, steps should be taken to train all statistical staff including officers in DES and line departments in the use of IT tools. Also, to ensure accountability and long-term sustainability of the recommended IT infrastructure, we strongly suggest strengthening of the Electronics Data Processing Centre.

ES.4.9 Data Bank

Data Bank may be created in DES with suitable staff with internet facilities. There is no web site of DES, this should be developed.

ES.4.10 DES as the Nodal Agency

The DES is a nodal agency for all statistical activities. It should be appropriately empowered to execute the recommended role of a nodal agency.

Further, the Director, DES should be associated with all major data collection programmes like Agriculture Census, Livestock Census, BPL census, etc.

ES.4.11 Data Quality Management

Given the central importance of quality to the State's Statistical System, and the fact that most of the twenty core statistical activities have been evaluated to be of medium and low quality using IMF's DQAF, the management of quality must be built into the management and technical practices of DES and the line departments.

ES.4.12 Representation of the Director, DES in state Level Committees

The Director DES should be made a member of various state level committees constituted by different departments so as to participate in decision making on vital issues of the government. This will facilitate DES in exercising its authority as the Nodal Agency

ES.4.13 Improving Coordination between DES, Line Departments, CSO and States

As recommended by the National Statistical Commission¹⁹, the Directorates of Economics and Statistics should be formally entrusted with the responsibility for a periodic review of the content, methodology and output of the statistics of all State Departments and to make suggestions for further improvement of these statistics.

¹⁹ Report of the National Statistical Commission, Paragraphs 14.5.24 to 14.5.27

1. INTRODUCTION

1.1 Indian Statistical System

While a rudimentary system of collection of essential statistics required for administrative purposes was in place even in pre-Independence India, it is only after Independence that the statistical system in India has evolved into what is to-day. The process of planning for economic development initiated soon after that historic event called for detailed information on a wide ranging and ever increasing set of socio-economic variables. Efforts to meet these needs, pioneered primarily by the vision of Prof. Mahalanobis, led to the establishment of a complex and enormous data collection, processing and analysing frame-work, which is essentially on a decentralized model, with the Union and the States playing their respective roles and the various ministries/departments and offices within each making their contributions. The Central Statistical Organisation performs the nodal and coordinating role in the Central Government, while the Directorates of Economic and Statistics in the States are responsible for similar functions at the State level.

In a World Bank grading of countries with respect to adherence to key international statistical methods and accepted standards of good practice, India was ranked in the 7-8 score on a score of one to ten (see Annexure 3)¹.

1.2 Need for Improvement

Even though India, thus, has an elaborate statistical system, it is not without its flaws-institutional, technical and operational-which together impact adversely on the quality of the system's output. Moreover, data needs are not static. They keep changing with changes in the socio-economic milieu, in economic and social policies pursued, and in the availability of statistical methods and tools. India's rapid progress towards a service economy and its growing integration with the global markets, naturally call for improvements in the existing data systems in terms of coverage, conceptual clarity, accuracy and processing speed as well as demand newer data products.

1.3 National Statistical Commission

It was precisely to assess such needs the National Statistical Commission was constituted in January 2000 to review the Indian statistical system and make recommendations for revamping it. The Commission made a number of recommendations in its report submitted to Govt. of India in August 2001 to bring about operational efficiency of the institutions involved and improvements in quality of data collected. Among other things, the Commission pointed to the need for strengthening the statistical systems within the States, enabling the Directorates of

¹ In the 2002 World Bank Review of Statistical Systems, 125 low- and middle-income countries with populations of more than one million were graded for adherence to key international statistical methods and accepted standards of good practice. Nearly half (60 countries) did not reach the midpoint score. Except for Afghanistan, the lowest scoring countries were from Sub-Saharan Africa. The countries of Eastern Europe and Central Asia, Latin America and Caribbean, and South Asia countries were generally in the higher scoring groups. The rankings are illustrative and could change if additional indicators or different weights were introduced.

Economic and Statistics to play a more pro-active role in technical coordination with all State Departments in respect of the content, methodology and dissemination of statistics, and organizing effective statistical cadres in the States.

1.4 Genesis of the Present Study

In the above context, the Ministry of Statistics and Programme Implementation in the Government of India, has taken up an India Statistical Strengthening Project (ISSP) and with the assistance from World Bank, the long-term objective of which is to help in achieving the proposal of the National Statistical Commission that “ The mission of the Indian Statistical System shall be to provide, within the decentralized structure of the system, reliable, timely and credible social and economic statistics, to assist decision making within and outside the Government, stimulate research and promote informed debate relating to conditions affecting people’s life”. The project is being taken up in two Tiers – Tier - I comprising exploratory activities, and Tier II comprising activities to take place over a longer time frame and which required the successful completion of Tier I activities.

The Tier I activities, inter alia, include a study to “**Identify the Specific Requirements for Strengthening of State Statistical Bureaus**”. The study is being conducted in two Phases. The objective of Phase I study is to document the status of data collection, processing and standards followed in each State, to assess the infrastructure and human resources available, and propose a position paper for each State for discussion at an All-India Workshop. A fully costed plan for upgrading each State Office will subsequently be developed by the Ministry of Statistics in Phase II and these plans will be implemented in Tier II of the project.

1.5 Objectives of the Study

The objectives of the Study are to document and analyse in detail:

- Existing statistical activities of the DESs and other line departments in the State Governments with reference to periodicity time schedule, methodology, sample size, etc.;
- Existing procedures for data collection, processing and dissemination, including the system at district/block level;
- Data flow between various departments within the State, between States and with Central agencies;
- Listing of available hardware, software and network facilities and level of utilisation;
- Manpower availability for different activities undertaken, together with their capabilities in terms of subject knowledge, use of IT tools, ability for analysis, report writing, etc.;
- Dissemination of information to public (periodicity/publication).

1.6 Terms of Reference

The assessment of the statistical activities to be done under the Study would be made in the following framework.

I Statistical Activities:

The existing statistical activities, particularly in the following areas are to be studied in relation to various parameters like base year, periodicity, timeliness, methodology, sample size, data volume, flow of information, etc. The receipt of statistical returns on statutory and non-statutory basis, concepts, definitions and procedures being used as well as data gaps, deficiencies and associated problems would also be assessed.

- (i) State Domestic Product Estimates
- (ii) Estimate of Capital formation and Savings
- (iii) Estimates of District Domestic Product
- (iv) Estimates of the contribution of local bodies
- (v) Data on major fiscal variables (Release of data on receipts, expenditure and fiscal balance in relation to the budget estimates on monthly, quarterly and annual basis)
- (vi) Participation in the conduct of Annual Survey of Industries – Field survey, tabulation and pooling)
- (vii) Compilation of Index of Industrial Production
- (viii) Crop area and production statistics
- (ix) Compilation of Wholesale Price Index numbers
- (x) Compilation of Consumer Price Index numbers
- (xi) Health, morbidity and mortality and family welfare statistics – infant mortality and under 5 mortality by sex, maternal mortality, prevalence and death rates associated with malaria and tuberculosis by sex, and prevalence and rate of HIV/AIDS
- (xii) Education and literacy statistics – adult literacy rate and enrolment ratio in primary education by sex
- (xiii) Labour and employment statistics (labour force and work participation rates by sex and proportion of women in wage employment in the non-agricultural sector)
- (xiv) Housing statistics – housing stock and additions to stock, investment in housing
- (xv) Birth and death registration and population
- (xvi) Electricity production and distribution statistics
- (xvii) Environment and forest statistics (Land area covered by forests, protected land area, proportion of people with access to safe drinking water and improved sanitation)
- (xviii) Participation in the surveys of National Sample Survey Organisation (NSSO) – field survey, tabulation and pooling
- (xix) Transport statistics – urban and rural road length, registration of vehicles, vessels and inland water transport equipment, passenger and goods transport by road
- (xx) Statistics for local area planning – economic and social infrastructure, population distribution by age, sex, education, employment etc.

II Organisational and functional structure

- (i) Functional and geographical structure
- (ii) Reporting channels
- (iii) Technical and administrative hierarchy
- (iv) Inter-relationship with other departments and institutions
- (v) Different categories of staff and their minimum qualifications and experience
- (vi) Existence of common statistical cadre
- (vii) Arrangement for coordination of activities

III Availability and Use of IT tools

- (i) Hardware and software resources
- (ii) Client Servers Computer systems with specifications
- (iii) Stand alone computers with specifications
- (iv) Web-servers, web-sites and internet connection
- (v) Operating systems and application software
- (vi) Data volumes and capacity utilization
- (vii) Number of software experts and data processing staff
- (viii) Qualifications, experience and levels of training of data processing staff

IV Mapping of resources and outputs in respect of each of the major data series/activities

Output vis-à-vis resources being used (Men and Machines) and Quality Parameters (Timeliness, adequacy and Reliability)

V Prioritisation of outputs and impact assessment

Priority of outputs, what happens if the output/activities are dropped or pursued with less quality, timeliness or detail.

VI What improvements can be achieved in the high priority outputs/activities if some of the low priority outputs/activities are dropped or pursued with less frequency, quality, timeliness or details and the resources thus saved used on high priority items

VII Requirement of additional resources for the improvement of various activities/outputs and the improvements likely to be achieved.

1.7 Expected Outcomes

The study is expected to enable preparation of a detailed report describing the factual position in respect of each of the following:

- An assessment of the possibility of producing current output with either better quality (timeliness, standard classification and definitions, smaller sampling error) or with enhanced efficiency (by reducing use of resources);

- Identification of principal data gaps (in terms of minimum desirable level as per national standards);
- Identification of possibility of improving effectiveness of transmission of data within the State and between the State and Centre;
- Identification of the possibilities to improve quality of data transmission to various stakeholders, including general public;
- Assessing possibilities of improving the capital stock used for computing (hardware and software); the skills of human resources; and where necessary improvement of physical facilities.

1.8 Methodology

The study is based on information gathered through a) a structured questionnaire from the Directorates of Economics and Statistics as well as the line departments in the State Government concerned with statistics pertaining to any of the core areas identified for the purpose of the study and b) discussions with the concerned officials to obtain their qualitative assessment. In addition to officers in the State level offices, officers at the District and lower levels are also covered taking two districts – one at either end of performance level - in each State.

1.9 Coverage of States

All the States and Union Territories in the country are covered by the Study. For the purpose of the study, they are grouped into 7 groups as follows:

- Group 1: Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana and Chandigarh
- Group 2: Rajasthan, Gujarat, Maharashtra, Goa, Dadra & Nagar Haveli, Daman & Diu
- Group 3: Andhra Pradesh, Karnataka, Kerala, Lakshadweep, Tamil Nadu and Pondicherry
- Group 4: Delhi, Uttar Pradesh, Uttaranchal, Madhya Pradesh and Chattisgarh
- Group 5: Bihar, Jharkhand, Orissa, West Bengal, Andaman & Nicobar
- Group 6: Assam, Arunachal Pradesh, Meghalaya and Sikkim
- Group 7: Manipur, Mizoram, Nagaland and Tripura

1.10 Organisation of Study

The Ministry of Statistics and Programme Implementation have assigned the study to M/s JPS Associates, New Delhi, who have identified and constituted study teams for undertaking the field study for each of the seven groups of States mentioned above. Each team comprised a Project Director, an Expert in Official Statistics and an Information Technology Expert.

1.11 Questionnaire

The members of the seven group teams jointly worked out a draft questionnaire for use in the field stay at a meeting convened by M/s JPS Associates during 11-15 April 2005 at New Delhi. The Draft was later cleared by the Ministry of Statistics and Programme Implementation. It was subsequently presented before a meeting of the Task Force constituted for the study, where certain additional suggestions were made. These were taken into account.

Broadly, the information sought from each of the offices covered relates to:

- (i) Organizational and functional structure
- (ii) Details of statistical activities undertaken regarding their periodicity, concepts, methodology, time lag, etc.
- (iii) Availability and use of IT tools,
- (iv) Mapping of resources and output
- (v) Prioritization of outputs and impact assessment
- (vi) Reprioritization of outputs/activities
- (vii) Requirement of additional sources
- (viii) Coordination and data flows between departments in the State and between State and Centre
- (ix) Data gaps and views of the State.

The questionnaire is supplemented by discussion eliciting qualitative responses.

1.12 This Report

This report relates to Rajasthan's statistical system. It is based on a study undertaken by Dr. N.K. Bhatnagar, Group Project Director in Group-II (comprising in addition, Shri B.V.L.N. Rao, the official statistics expert and Shri Ajaydeep Singh IT Expert).

This report builds on the Draft Report submitted to MOSPI in January 2006, and incorporates the suggestions made by (i) the Task Force and the State DES, and participants of the de-briefing Workshop held in Delhi on 14th February chaired by the Secretary, MOSP&I; and (ii) the Task Force meeting of 21st July 2006 that approved the Madhya Pradesh Report as the Model Report. The model of the Madhya Pradesh Report has been adopted for this Report in terms of structure and issues addressed and (iii) the Task Force meeting of 12th December 2006 that approved the Draft Final Report. The comments of the DES Rajasthan vide their letter No F5(3)3/C/HDR/DES/04 dated 22nd January, 2007 have been incorporated in this report.

1.13 Difficulties encountered

While the DES appreciated the objectives of the study and was cooperative, however with respect to the Line Departments barring the Board Of Revenue, Ajmer, no other organization furnished the information in the prescribed proforma and whatever information was collected was through personal discussions.

1.14 Acknowledgements

The Chairmen, Mr. K.V.Rao² and Mr. K.A.D.Sinha³, Members and Mr. M.M.Hasija, Director, NSSO (FOD) Member Secretary of the Task Force have continuously provided valuable guidance and advice on technical, managerial and other issues vis-à-vis the core statistics activities. The Terms of Reference and Composition of the Task Force is given in Annexure I. The collective wisdom, experience of the Task Force has enriched this

² During the period March 05 to February 2006 as ADG NSSO (FOD) and from March 2006 to September 2006 as Director General NSSO

³ During the period October 2006 to December 2006

Report. The Consultant acknowledges and unequivocally states that this Report has been made possible on account of the peer role of the Task Force.

The study team appreciates the excellent cooperation received from the Director and other officers of the Directorate of Economics and Statistics, Rajasthan, as well as from officers in various other State government departments with whom discussions were held during the course of the Study. A list of all the contacts made during the study visit to the State of Chattisgarh is at Annexure II.

2. THE STATE OF RAJASTHAN – KEY CHARACTERISTICS



2.1 Geographical Features

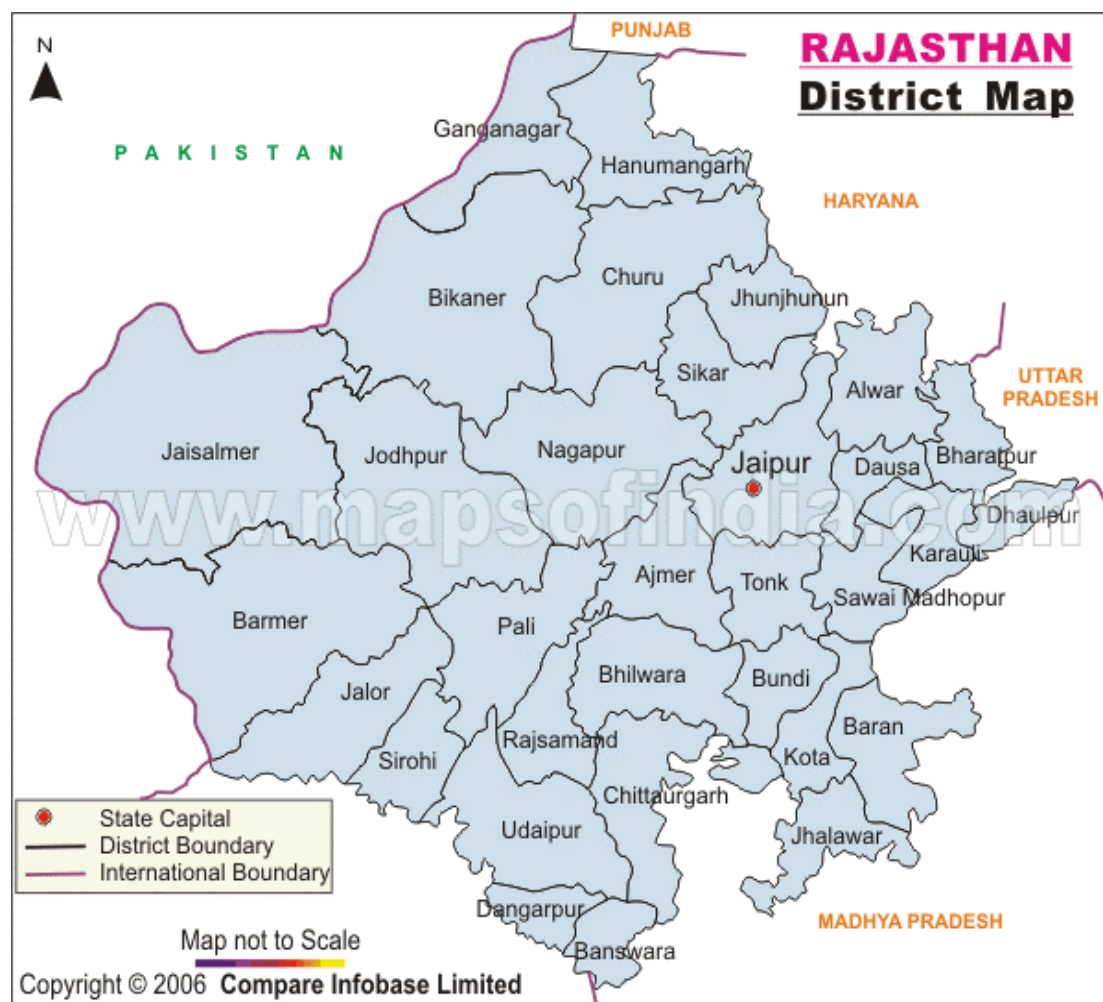
The state is located between 23.3 degrees and 30.12 degrees North Latitude and 69.30 degrees and 78.17degrees East Latitudes. The geographical Area of the State is 3,42,239 sq. Km. In the North the State is bound by Punjab & Haryana States, on the eastern side it is surrounded by Uttar Pradesh, on the southern side are Madhya Pradesh and Gujarat and the western side of the state has the International Border with Pakistan. The state has only one perennial river Chambal. The Arravali Range extending from South west to North east virtually divide the state into two climatic zones. The west of Arravallis is the Desert Zone and Arid Zone and on the other side it is the semi-Arid Zone.

2.2 Demographic Profile

The population of the state is 565.07 lakhs, of which 76.61% is in the rural areas and 23.39% in the urban areas. Male population in the state constitutes 52.06% and the female population stands at 47.94%. The sex ratio is 921 females per thousand males. The birth rate is 30.6 (rural 31.9 and urban 24.2), death rate is 7.7 (rural 8.0 and urban

6.4), and the infant mortality rate is 78 (rural 81 and urban 55)¹. The population density in the state is 165 per sq. km; participation rate in the state is 42.06 persons, males 49.95% and females 33.49%.

2.3 Administrative Organization



The present State of Rajasthan was formed with the merger of 19 princely States, 3 Chiefships and centrally administered State of Ajmera-Merwara. Integration took place in seven steps beginning with the formation of Matsya Union in 1948, and merger of Ajmer, Abu Road Taluka and Sunel Tappa in 1956 as the last step. For administrative purpose the State is divided into 7 Divisions, 32, districts, 1,88 sub-divisions. With 237 Panchayat Samitis, 9,189 Village Panchayats the state has 41,353 Villages, 222 Towns, and 241 Tehsils. There are 32 Zila Parishads, and 183 Municipalities in the State.

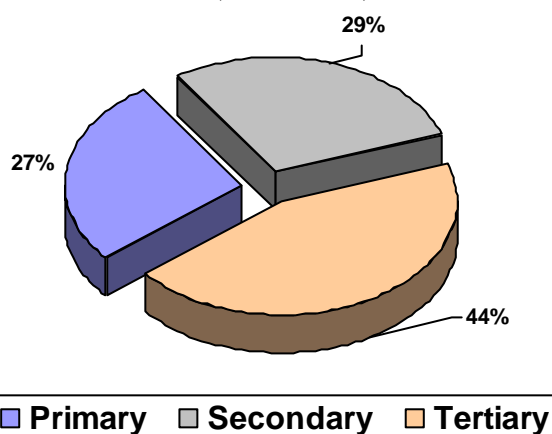
¹ Figures relate to Sample Registration Scheme 2002

2.4 State of the Economy

2.4.1 State Income

The composition of GSDP and other related data is given in charts and tables below:

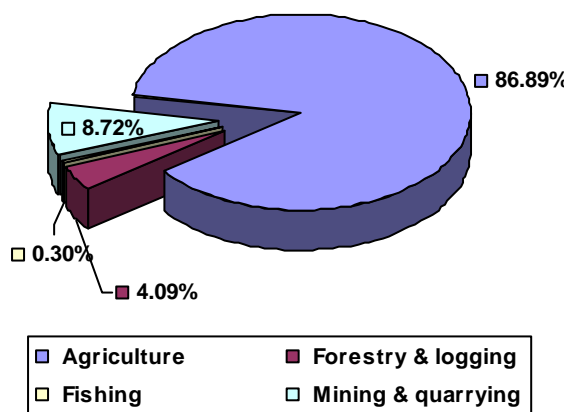
Break up of GSDP at factor cost, by industry of origin at current Prices (2005-2006)



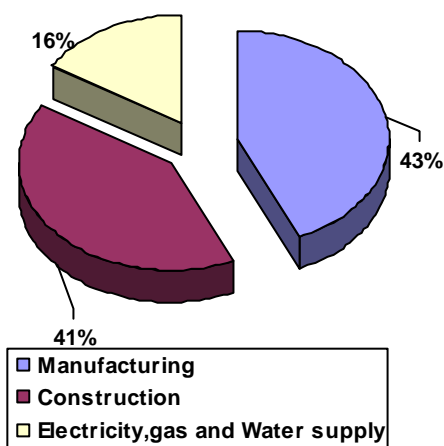
Break-up of GSDP (Rs in Lacs)

Primary	Secondary	Tertiary	Total
3255063	3562029	5413739	12230831

Break up of Primary sector

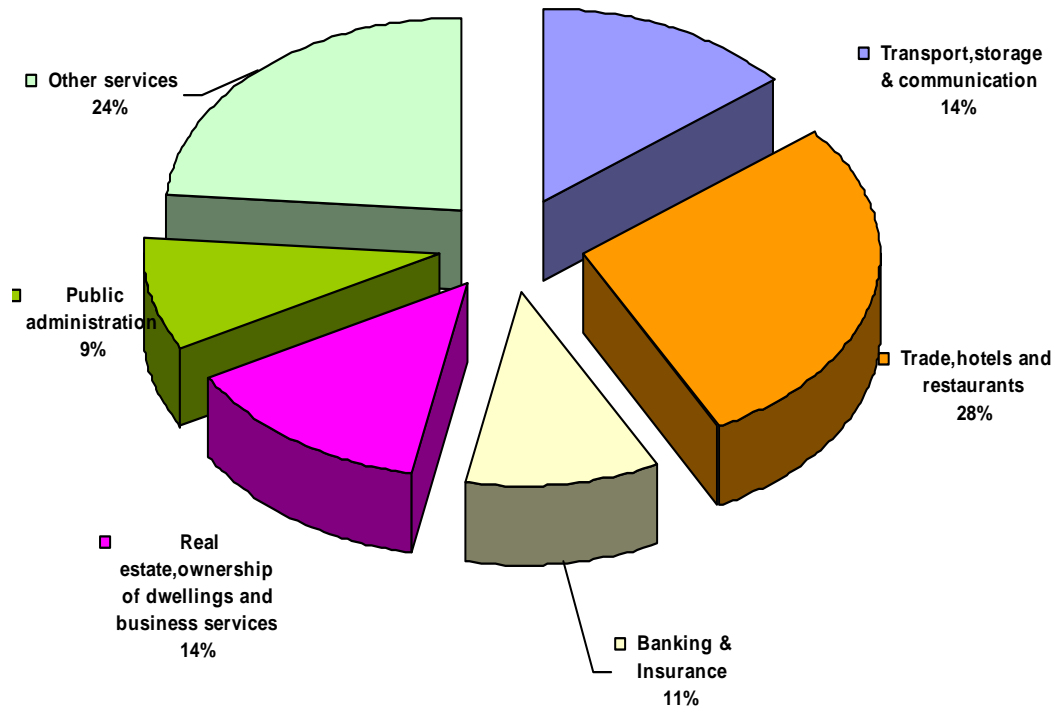


Break up of secondary sector



Agriculture	Forestry & logging	Fishing	Mining & quarrying	Total	Manufacturing	Construction	Electricity, gas and Water supply	Total
2828375	133092	9774	283822	3255063	1544878	1445033	572118	3562029

Break up of GSDP – Tertiary sector



(Source: MOS&PI 21-07-2006)

Break up of Tertiary sector (Rs. Lakhs)

Transport, storage & communication	Trade, hotels and restaurants	Banking & Insurance	Real estate, ownership of dwellings and business services	Public administration	Other services	Total
765949	1535021	572214	743827	513111	1283617	5413739

3. STATISTICAL SYSTEM IN THE STATE

3.1 The System

3.1.1 Historical Perspective

The origin of Statistical System in Rajasthan dates back to 1944-45, when a Statistical Officer under the Directorate of Public Health was set-up in Jaipur State – one of the 19 princely States – for collection of Vital Statistics. In 1948, after Independence, two posts of statistical nature were created in the United States of Rajasthan – one in the Census Department and the other in the Planning Department. Next year, in 1949, after formation of the State of Rajasthan as it stands today, Office of the Special Statistical Officer was set up to provide statistics for industrial development of the State. Subsequently in June 1950, the statistical units existing earlier were integrated to form the Bureau of Statistics, with the Chief Statistical Officer as its Head, assisted by 3 Statistical Officers and a few non-gazetted and non-technical personnel. Along with the Bureau, statistical units were also established in some of the major departments like Medical & Public Health, Agriculture, Labour and Industries. The Bureau continued the activity of collecting statistics from various departments and publishing a Monthly Bulletin of Statistics that was later converted to Quarterly Bulletin.

In 1956, the Bureau was re-organized into the Directorate of Economics & Statistics (DES). This was done to extend the scope and coverage of data collection in response to the needs of development and planning. During the period 1958 to 1963, a number of actions were taken to reorganise the State's statistical system. Some of the reorganisational steps were:

- Establishment of a unified state statistical service - the Rajasthan State Statistical Service ¹
- Merger of semi-official organization, Ajmer Board of Economic Inquiry with DES
- Transfer of work relating to collection of statutory data under the Industrial Statistics Act 1952 for Labour & Industries to DES
- Merger of staff (Progress Assistants numbering 232) working in Panchayat Samiti
- Strengthening of DES for conducting Sample Surveys of NSS on matching basis, and for conducting other ad hoc Surveys
- Transfer of work relating to crop-cutting Surveys from Agriculture Department to the Board of Revenue under technical supervision and staff of the Directorate of Economics & Statistics
- Merger of Directorate of Industrial Surveys, and Directorate of Regional Surveys with DES.

With implementation of the above steps, DES assumed the status of the nodal authority for statistical activities in the state.

¹ Rajasthan State Statistical Service came in to being in 1958

3.1.2 The Current System

The current system of official statistics in Rajasthan is, like in the Centre and various other States, a decentralized one, with the individual line departments being responsible for collection, processing and releasing the data in their own subject fields, and the Directorate of Economics and Statistics playing the role of a nodal agency, in addition to statistical activities in its own sphere. Even so, a few line departments like Agriculture, function independently. The data collection, except to the extent it is covered by Central legislations like Collection of Statistics Act and Registration of Births and Deaths Act, is not facilitated by any State legislation.

3.2 DES – Organizational Structure

The Directorate of Economics & Statistics Rajasthan functions under the administrative control of Planning & Statistics Department of the Government of Rajasthan. A Director heads the Directorate of Economics & Statistics, and is the ex-Officio Deputy Secretary to the Government. The Director is the Nodal Authority for all statistical work in the State and also functions as:

- Chief Registrar of Births and Deaths
- State Agricultural Statistics Authority (SASA)
- Officer on special duty for Annual Survey of Industries (ASI) National Sample Survey (NSS) and Survey for Implementation of Agricultural Statistics
- Controlling Authority for Rajasthan Statistical Subordinate Services.

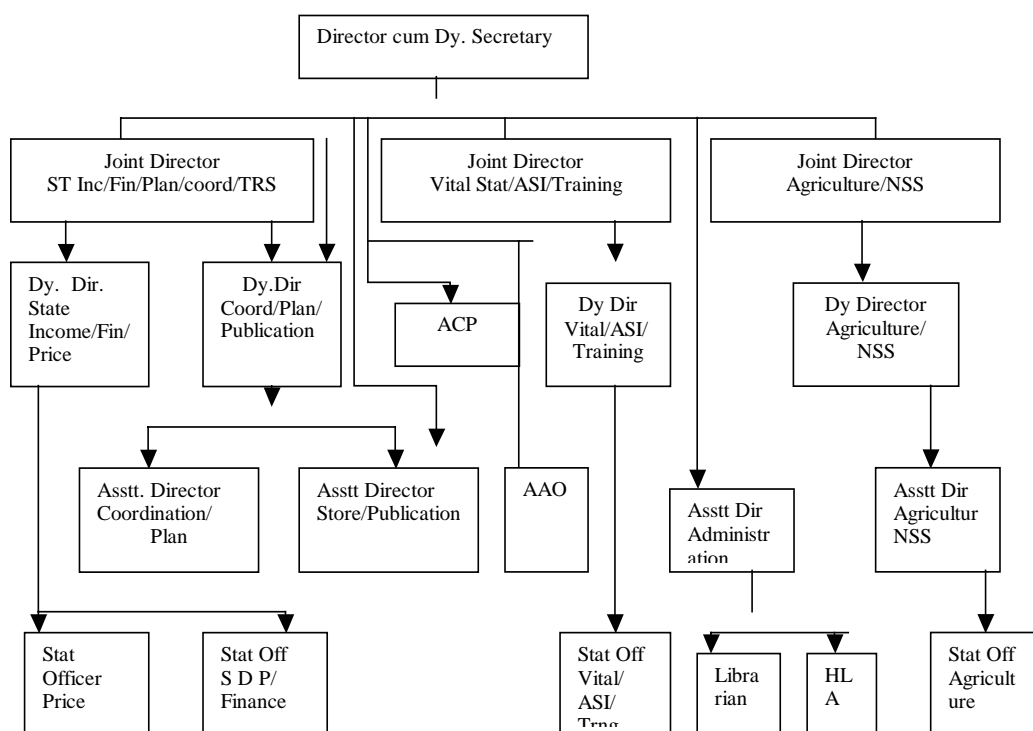
The present Director also holds additional charge of the post of Director Monitoring in the Planning Department

DES has district level presence through its District Statistical Offices (DSOs) in each of the 32 Districts of the State. The District Collector is the controlling authority for the District Statistical Officers. The District Offices are located in the District Collectorate.

A District Statistical Officer heads the District Statistical Office, and he is supported by Statistical Assistants, Statistical Inspectors, Computers and ministerial staff and fourth class employees assist the District Statistical Officer. Only the Statistical Officer is in the Gazetted Category and is directly answerable to the District Collector for day-to-day work. The number of staff in each District varies according to the workload in terms of number of GCES, Factories for ASI, samples of NSS, among others.

The organisational structure of DES is given in the chart below:

Chart 3.1 - The Organizational Chart of the Directorate is given below



3.2.1 Functional Units of DES

The DES has the following functional units/ divisions:

Table 3.1: Functional Divisions of DES and Activities

Sl.No.	Function	Activity
1	Coordination unit	Collection and compilation of the statistical data pertaining to the line departments
2	Human Development Research and coordination Unit	Implementation of the activities of the "Strengthening State Plans for HD Project"
3	Economic Census Unit	Conduct Economic Census, 5 th Economic Census is under operation
4	Publication Unit	Publication of the data in various publications like: Statistical Abstract, Basic Statistics, Some Facts about Rajasthan, District Statistical Outline
5	Vital Unit	Registration of Birth and Death events and related Statistics
6	ASI Unit	Annual Survey of Industries related work
7	NSS Unit	Field work relates to the various rounds of NSS surveys
8	Agriculture and TRS Unit	Agricultural statistics and timely reporting of area estimates of the principal crops
9	Finance and Art Unit	Economic Review and other related work
10	State Income Unit	preparation of State income estimates and DDP estimates time to time
11	Price Unit	Compilation of Wholesale, consumer

Sl.No.	Function	Activity
		expenditure and other indices
12	Planning Unit	Annual plan and Five year Plan related works
13	Training Unit	Training of staff
14	Tabulation and Computer Unit	Data processing of NSS reports and TRS work
15	Administration Unit	Overall administration of DES
16	Stores, Accounts and ACR	Support functions to Administration

3.3 Functions of DES

Following are the functions of the Directorate:

- (i) Collection of statistics of socio-economic conditions and activities in the State from primary data collection agencies through sample surveys and censuses (other than decennial population census) under statutory provisions, and from published sources.
- (ii) To meet the statistical requirements of the Government for policy formulation, and to extend the coverage of statistical data collection as required for the developing needs of the State.
- (iii) To develop and maintain co-ordination of statistics, between District and State level, to ensure adoption of uniform concepts and definitions in data collection for precision and comparability; to improve techniques of data collection, their analysis, interpretation, presentation and publication; to vet the statistical information before publication by any government department.
- (iv) To undertake studies relating to Planning in the State and undertaking collection, processing and analysis of data as may be necessary for long-range plans for economic development.
- (v) To compute the State Income and conduct research for development of related aggregates; to take up research work on State Finances, demography and other aspects of the economy of the State.
- (vi) To develop statistical data for subjects such as trade conditions, taxation and provide the Government with analysis of Budgetary statistics;
- (vii) To prepare various indices of economic activity such as wholesale price indices, consumer price indices, indices of agricultural production, indices of industrial production etc;
- (viii) To spread awareness of the socio-economic trends through graphical representation;
- (ix) To establish liaison between the Directorate, Government Departments, The Statistical Organizations in other States, the Centre and the States and the Public on matters relating to Statistics and economy of the State.
- (x) To render technical advice on Economic and Statistical matters to other Departments of the State.
- (xi) To promote and develop statistical training in the State especially for the Government personnel and primary reporters of data in different fields.
- (xii) To establish liaison between Government departments, statistical organisations in other states, the Central Statistical Organisation in connection of the matters relating to statistics and economy of the state.
- (xiii) To prepare charts and graphs pertaining to socio-economic activities in the state.
- (xiv) To organise/impart trainings pertaining to Registration of Births and Deaths

and implementation of Registration of Births and Deaths Act and Rajasthan Rules, 2000.

3.4 Statistical Activities of DES

3.4.1 Identified Activities

The Identified statistical activities of DES are listed below and discussed in detail in Chapter 4.

- Estimation of State Gross State Domestic Products.
- Estimation of Gross Domestic Capital formation.
- Estimating District Domestic Products
- Estimating contribution of Local Bodies
- Economic & Purpose Classification of the State Budget.
- Participation in NSS on matching basis.
- Annual Survey of Industries, compilation of statistical return relating to factories falling in state and surveyed by NSSO, GOI.
- Compilation of IIP
- Civil Registration Scheme of Birth & Death and Causes of Death.
- Preparation of following agricultural indices on the basis of methodology given by the DES, Ministry of Food & Agriculture:
 - Area
 - Production
 - Productivity
 - Farm Harvest Prices
 - Net Area Sown
 - Gross Area Sown
 - Gross Irrigated Area and
 - Index of Agricultural Wages

3.4.2 Other Statistical Activities of DES

In addition to the core statistical activities, DES is also engaged in the following activities:

1. Economic Review of Rajasthan² highlighting the important developments in different sectors of the State economy
2. Publishing the Economic Review of the State.
3. Budget in Brief³
4. Economic Cum Functional Classification of Budget
5. Census of state government and local bodies employees.
6. Collection of official statistics from various departments and publishing it.
7. Training of statistical personnel.
8. Electronic Data Processing.

² The latest available publication is for the year 2004-05

³ The latest available publication is for 2005-06

9. Implementation of the scheme of Improvement of Crop Statistics in collaboration with the field office of the NSSO.
10. Human Development Research
11. Tax Research Cell (under direct control of the Finance Department)
12. Conduct of annual Census of State Government and Local Bodies employees
13. Conduct of Economic Census
14. Compilation of Index for Housing Construction
15. Compilation and publication of data in various publications like: Statistical Abstract, Basic Statistics, Some Facts About Rajasthan, and District Statistical Outline

Some of the above activities are discussed below:

3.4.2.1 Human Development Research and Coordination

The project is an initiative of the Planning Commission, Govt. of India and is supported by United Nations Development Programme (UNDP). In its first phase it is being implemented in eight (8) states across the country, Rajasthan being one of them. In order to implement activities planned under the project in Rajasthan a Human Development Research and Coordination (HDR & C) unit has been established in Directorate of Economics & Statistics (DES), Yojana Bhawan, Jaipur, Key objectives of the project are as under-

- a) Follow-up of the State Human Development report (SHDR) by building the institutional capacities of the relevant government department,
- b) Strengthening State Statistical System to ensure better collection and reporting of district and local level indicators for Human Development, and
- c) Identifying strategic options for financing of Human Development.

At the inception of project DES had conducted a survey in one (1) percent of villages in conjunction with the 5th Economic Census, to collect information on HD related issues. In order to achieve the enlisted objectives, the project entails a wide gamut of activities, some of which are ongoing and certain others to be implemented in the near future. The major activities are as follows-

- a) Preparation of District Human Development Reports (DHERs). For (4) Districts have been selected for preparing the DHDRs, namely, Dungarpur, Barmer, Jhalawar and Dholpur
- b) State/District level trainings/workshops on HD
- c) Institutionalise further the SHDR process
- d) Analysis of selected themes for HD

Among the other important activities, a Video Conferencing Unit has been set-up to ensure prompt communication among UNDP, Planning Commission, State HQ and the districts.

3.4.2.2 Scheme of Improvement of Crop Statistics

DES in collaboration with the field office of NSSO is implementing the Improvement of Crop Statistics Scheme. The program of work under the scheme of ICS consists of

carrying out checks in each agricultural season on (i) enumeration done by the Patwaris in set of selected sample villages; (ii) preparation of the crop abstract statements on the basis of the entries made by the patwaris in the Khasra Register, and (iii) crop cutting experiments conducted by the State primary workers in sample of villages.

3.4.2.3 Economic Census

Economic Census is conducted quinquennially throughout the country under central scheme. It provides vital information on own enterprises, employment etc. It fills up the data gaps related to, among others, the informal sector. The field work of the Fifth Economic Census is currently (November 2006) under way.

3.4.2.4 Economic Cum Functional Classification of Budget

The two budget documents that present the complete picture of Government transactions are i) detailed estimates of revenue receipts and demand for grants, and ii) annual fiscal statement. On the basis of these documents government expenditure is classified in accordance with a) the economic character of expenditure and b) the purpose it is likely to serve. The former is known as economic classification. The two types of classification are combined to form the “Economic-cum- purpose classification. The present publication released relates to the period 2000-01 to 2002-03.

3.4.2.5 Census of State Government and Local Bodies Employees

This is an annual exercise undertaken by DES, in which data are collected on the number and pay and allowances of staff of all establishments under State government and the local bodies. The data relate to July of each year and are usually collected by August. The processing of census returns is done in the EDP unit of the DES.

3.4.2.6 Economic Review of Rajasthan

The DES prepares and publishes the Economic Review of the State providing data on socio-economic and infrastructure parameters. The data for this is collected from different state organisations. The report also analyses data on State Domestic Products and indicates its trends under different sectors. Price situation is also analysed. Level of infrastructure in Roads, Power, Education, and Health & Tribal Welfare are also projected. This is an annual publication distributed to Legislators before presentation of State Budget in the State Assembly.

3.4.2.7 Collection and Maintenance of Official Statistics by other Departments

Various publications are brought out annually in which the data covering almost all aspects are depicted. The data on Agricultural Area & Production, infrastructure is depicted District-wise. Another publication depicting Inter State comparison of various activities is brought out once in two years.

An Index of cost of Construction is also prepared for the construction of houses for Low Income Group constructed by the Housing Board for Jaipur Centre.

Quarterly prices of construction materials and wages of labour are also being

collected through the District Statistical Officers for all the district headquarters. Monthly Review of Retail and Whole sale prices and CPI for industrial workers is sent to Governor, Chief Minister and other offices of the state government. The review is released in the end of next month for which the data is collected.

An Index of cost of construction is also prepared for the construction of houses for the low-income group constructed by the Housing Board.

Weekly prices of construction materials and wages of labour are also being collected through the District Statistical Officers for all the District headquarters.

The Director sends monthly Review of Retail and Wholesale Prices, and the CPI for working class to Governor, Chief Minister and the CSO.

The review is released in the month next, for which the data is collected.

3.4.2.8 Index of cost of housing construction

An Index of cost of Construction is prepared for construction of houses for Low Income Group constructed by the Housing Board for Jaipur Centre. Quarterly prices of construction materials and wages of labour are also being collected through the District Statistical Officers for all the district headquarters.

3.5 Statistical Activities of Line Departments

The identified statistical activities of line departments are discussed in Chapter 4, however a number of line departments are engaged in statistical activities other than the identified ones. These activities are discussed below:

3.5.1 Agriculture Department

The department is engaged in the following non core statistical activities:

1. Preparation of Forecast of Area Sown on the basis of the seed and fertilizer distributed⁴.
2. Collecting and compiling statistics on
 - a. Area
 - b. Average yields (particularly of High Yielding Varieties)
 - c. Rainfall
 - d. Weather related parameters
 - e. Soil treatment adoption
 - f. Timely sowing
 - g. Use of hybrid and HY seeds
 - h. Use of fertilizers
 - i. Use of bio fertilizer
 - j. Use of micro nutrients
3. Real time assessment of crop damages due to various reasons, drought, excessive

⁴ However, the Forecasts by Board of Revenue (BOR) are normally used.

- rainfall, locust etc.
4. Inputs surveys to assess inputs for calculating costs of production and other farm management practices.
 5. Licensing authority for supply of seed, fertilizers and pesticides and maintains statistics related to these aspects through returns submitted by suppliers and through Farm Management Studies conducted every season.
 6. Monitoring and evaluation of agricultural practices
 7. Compiling district and sub-district level data

3.5.2 Directorate of Agricultural Census

Agricultural Census is a Quinquennial activity directed at collecting data through census on such parameters as cultivator-specific area cultivated, residential status, periodicity of cultivation, irrigation facilities available and used (frequency), farm inputs used, source of inputs, financing of inputs, government extension facilities availed, among others. The data is collected in formats/returns prepared by the Ministry of Agriculture, GoI. While the census is conducted by the Directorate of Agricultural Census, the administrative department for Agriculture Census is the Revenue Department. The Census data and reports are sent to the Revenue Department, and also to the Ministry of Agriculture, GoI.

The staff⁵ engaged for agriculture census consists of:

- One Director
- One Assistant Director
- Three Statistical Officers
- Five Statistical Assistants
- Three Statistical Inspectors
- Three Computers

The Directorate has two computers NIC assists in tabulation though processing is done in the Department.

The time lag in processing of Agriculture Census results is 48 months.

3.5.3 Department of Finance – Tax Research Cell

A Tax Research Cell has been established in the Finance Department to collect and analyse financial data. The basic data emanates from district treasuries. The outputs of this cell are used for Budget preparation and for review of the State's financial position.

The function of the cell includes study, analysis and tabulation of statistical data received from various departments of the State. This cell collects, tabulates, and analyses data on tax and non-tax revenue of Rajasthan, and of other states, for comparative study of states' finances. The Cell also analyses data related to progress report of various departments.

The Cell is manned by a Research Officer (Assistant Director Statistics) and a

⁵ All staff is from the common statistical cadre

Statistical Assistant. Both are from the Common Statistical Cadre.

3.5.4 Directorate of Manpower & Gazetteers

The Directorate functions as part of the Department of Planning of the Government. The Directorate prepares and monitors the State Government Educational Plans (Primary, Secondary, Higher Secondary and Colleges and Universities). It also monitors manpower in the areas of science and technology, and environment, among others. The Manpower Directorate registers technical graduates passing out from technical institutions and recommends their placement to various employers. The Directorate also conducts surveys to prepare comparative studies on facilities and infrastructure in various institutions like: laboratories, private technical institutions; and private Pharmacy Colleges.

The Directorate functions under a Director cum Dy. Secretary (Plan) of the common statistical cadre. He is assisted by:

- One Joint Director
- One Assistant Director
- One Statistical Officer
- Two Statistical Assistants
- One Research Assistant (from Employment Service) in the Secretariat
- One Deputy Director and one Statistical Officer

The Directorate does not have any IT infrastructure. All statistical compilations are done manually.

3.5.5 Social Welfare Department

The Department collects socio-economic data with respect to socio-economic infrastructure, and welfare programmes of the Government. The Department collects monthly statistics from district offices and NGOs pertaining to

- welfare schemes with respect SC, ST, OBCs, and physically and mentally challenged social security statistics
- old and infirm and Lepers' Homes
- special scholarships
- assistance to old, widows and abandoned women
- education of SC, ST, OBCs
- economic upliftment measures for SC, ST, OBCs, Gadhiya Lohars, among others
- social reform schemes such as de-addiction programs, dowry abolition etc.

The data are collected by the District offices from their supervisors, and is passed on to the head office.

Following two publications are published regularly:

- Paryas and Pragati- Administrative Report
- Special Component Plan of Annual Plan for Rajasthan

The following staff is deployed for the above statistical activities:

One Deputy Director (for Monitoring)
One Statistical Officer
Four SAs (including 2 for component plan unit)
Four computers
One computer operator

The staff is from the Statistical Services Cadre.

One PC is available.

3.5.6 Food and Civil Supplies Department

The Food & Civil Supplies Department maintains statistics pertaining to Fair Price Shops, Ration Cards, and Allotment and lifting of essential commodities. The statistics also include data with respect to information required under the Essential Commodities Act such as Raids, Investigations, and Ceased Stock etc. The Reports are forwarded by Civil Supplies Inspectors to the District Civil Supplies Officer, and to the Department on monthly basis.

For its statistical activities, the Department has deployed the following staff:

- One Assistant Director
- One Statistical Assistant
- One Computer

The Department has 4 PIV PCs for this work. The software used is the usual program available with Windows XP.

3.5.7 Co-operative Department

The Department maintains data pertaining to Cooperative Societies, Cooperative Banks, and consumer services. Information relates to type of societies, share capital, working capital, balances, investment in securities by type (Govt. securities, Trustee securities), Loan outstanding, Interest payment. The data are sent to the National Bank for Agricultural and Rural Development (NABARD).

Data is collected on RBI prescribed performa (table) no.9 to 51 and appendix 1 to 13 from Apex Bank, Land Development Bank, Urban Co-operative Bank, Kraya Vikarya Samitis, Labour Contract Co-operative Societies, Housing Co-operative Societies, Primary Consumer Stores, Wholesale Consumer Stores, Industrial Co-operative Societies, among others.

The data is collected in the Districts by the Assistant/Deputy Registrars and is sent by them to the Registrar Cooperative Societies. The time lag is about two years as the data is sent only after the Audit of the Societies and Banks is completed. At present data relating to 2003-04 is being collected

The following staff from the Common Statistical Cadre is deployed:

- One Assistant Director

- Two Statistical Assistants
- Ten Computers

The staff is from the common statistical cadre.

No IT facilities are available in the Department for Statistical work.

The Department has two publications: Pragati Prativedan and a Nagrik Adhikar Patra (Citizens' Charter).

3.5.8 Planning (Institutional Finance) Department

This Department does the work of coordination between the State Government, Commercial Banks, Reserve Bank and National Bank for Rural and Agricultural Development (NABARD) through the State Level Coordination Committee. The Department also coordinates Plan Formulation and implementation in some 45 departments.

The Department maintains data pertaining to the Banking setup in the State and its functioning in respect of Poverty Alleviation Programs, Rural Development Programs, 20 Point Program, Loans, Recoveries, Credit, and Client problems etc.

The department has one Deputy Secretary, one Joint Director, one Deputy Director, one Statistical Officer, two Statistical Assistants, one Computer, and one Research Assistant (Evaluation Service).

One PC has been provided, which is not used.

3.5.9 Rural Development

Rural Development Department maintains data pertaining to 22 schemes of rural development including centrally sponsored schemes. The data is collected through surveys done by NGOs, and monitoring of schemes done by monitors appointed by the Ministry of Rural Development, GOI. The data collected and compiled is analysed and reports prepared on a monthly frequency for CSS and sent to the GoI. Reports on state schemes are prepared with a quarterly frequency.

3.5.10 Tourism Department

The Department maintains statistics relating to tourism in the State. The data available are: number of various categories of Hotels, Guest Houses and Restaurants, including Hotels and Guest Houses run by the Tourism Development Department. Data pertaining to tourists arriving in the State by country of residence, and domestic tourists are also maintained. In addition data relating to the fairs and festivals, approximate attendance of tourists in those fairs and festivals, registration of guides and information relating to projects for promotion of tourism is also maintained by the Department.

The Department has one Assistant Director Statistics and three Statistical Assistants from the common statistical service.

The Department maintains a web site and is well connected by computers with its area offices.

3.5.11 Irrigation Department

With one Joint Director, Statistics from the common cadre, the Irrigation Department maintains statistics regarding potential for irrigation created under various major, medium and minor irrigation schemes under Plans. Information is reported by the executive engineers through the superintending engineers of the four zones to the Additional Chief Engineers, who forward the data to Chief Engineers Office where the data is collated compiled and tabulated. The Department has adequate IT facilities.

3.5.12 Mines & Geology Department - Udaipur

The Mines and Geology Department collects statistics relating to mining activities in the state. Data are available relating to production, mining leases, revenues, salary, employment etc of major and minor minerals. Among the major minerals data are maintained for metallic minerals and non-metallic minerals. Mineral based information is collected from District Industrial Units and it is made available District and Tehsil-wise for Government use. Original documents relating to mines lease contacts are also maintained in this cell.

The statistical cell of this department consists of: one Mining Economist, one Assistant Director, and two Computers

Khanjz Bulletin is also published quarterly in the department.

3.5.13 Planning and Statistics Department – Plan Finance Group

The Plan Finance Group coordinates plan formulation of the assigned Departments like Irrigation, PHED, PWD, Social Welfare, CAD, Ground Water, Urban Development, Local Self Government, Med. & Health, and Ayurvedic Department. For purposes of coordination this Group collects and compiles relevant data. The Group is manned by a Dy. Secretary cum Director of the common cadre, one Joint Director, one Assistant Director, one Statistical Officer, five Statistical Assistants and one Statistical Inspector.

This group also looks after the Economic Policy & Reform Committee, which has now replaced the State Planning Board.

3.5.14 Planning and Statistics Department - Plan Monitoring Group

The Group looks after monitoring of the Plan implementation of the Annual Plans of all the Departments. The Group is headed by a Deputy Secretary cum Director Statistics, one Deputy Director, one Assistant Director, one Statistical Officer, six Statistical Assistants, two Statistical Inspectors and one Computer.

3.5.15 Planning and Statistics Department - Project Monitoring Unit

The Unit looks after the foreign aided projects and monitors them. The Unit scrutinizes the Project approved by the Inter Departmental High Power Committee for submission to the foreign funding agencies, mainly the World Bank, JBIC Japan, KFW Germany, Asian Development Bank, Swedish Government and the International Development Cooperation, UK.

The Unit maintains data regarding

1. The World Bank funded projects:
 - a. District Poverty Alleviation Project (DPIP)
 - b. Rajasthan State Watershed Structuring Project
 - c. Power Sector Restructuring Project
 - d. Development of District Level Health System in Rajasthan
 - e. State Hospitals Renovation Project
2. KFW Germany funded projects:
 - a. Apni Yojna – Rural Water Supply
 - b. Project Residential Schools for Disadvantaged
3. ADB Funded Projects:
 - a. Urban Infra structure Development Project in six Districts
4. JBIS funded projects:
 - a. Rajasthan Forests and Bio-diversity Project aided by JVIC.

The Unit has one Deputy Director (Evaluation service), one Assistant Director, one Research Assistant, two Statistical Inspectors, one Investigator, and one compiler.

3.5.16 Economic Policy and Reforms Council:

Economic Policy and Reforms Council has been constituted under the Chairmanship of Hon'ble Chief Minister to give suggestions on economic policy for the state.

One Deputy Director, One Assistant Director, Two Statistical Officer are working with the Council for collecting and analyzing data on the state's socio-economic performance.

Five computers with printers have been provided to the Council on contract basis.

3.5.17 Department of Local Self Government, Urban Development and Planning

A Statistical Cell is functioning in the Directorate of Local Bodies for collecting actual data of income/expenditure from Nagar Palikas, preparation of reports pertaining to annual plan, five year plan, and sub-plan for SC etc. Apart from that, monthly, quarterly and annual progress reports on state schemes are also prepared in the cell. Survey of BPL families is also conducted by the Cell.

The Cell consists of: one Project Director, two Deputy Directors, one Assistant Director, 28 Statistical Assistants (including 25 at district level), three computers, and two District Project Officer at district level

3.5.18 Commercial Tax Department:

The Statistical Cell of the department collects, compiles and analyses data on revenue receipts, tax assessment, and other related parameters like production and sale of big manufacturers. The data is collected in prescribed formats from Zone/Circle/Ward Offices.

The Cell's staff consists of one Joint Director, one Deputy Director, three Statistical Assistants, one Statistical Inspector, and three Computers.

3.5.19 Industries Department:

The Statistical Cell of the Industries Department collects data on:

- unregistered industrial units
- number of industrial units sanctioned by Rajasthan Finance Corporation (RFC)
- Interest subsidy scheme
- subsidy on DG sets
- sales tax intensive scheme
- Khadi village industries
- handloom and training programme

The staff consists of one Deputy Director, two Statistical Officers, 21 Statistical Inspectors, and two Computers.

3.5.20 Animal Husbandry Department

The Statistical Cell of this department conducts livestock census, among other activities. The staff consists of one Deputy Director, six Statistical Assistants, and 10 Computers.

3.5.21 Revenue Board Ajmer

The Board collects Agricultural Statistics for which it has deployed one Assistant Director, three Statistical Assistants, and three computers

3.5.22 Tribal Area Development, Udaipur

The Statistical Cell performs the following functions:

- Formulation and monitoring of TAD Scheme.
- Monitor implementation of State Plans and Central Sponsored Schemes.
- Review Progress of point no.11-B under 20 point programme.

The Cell of the department consists of four Deputy Directors, one Assistant Director, one Junior Research Officer, one Research Assistant, and one Compiler.

3.5.23 Panchayati Raj Department:

The Planning and Statistical cells of the Department collect socio-economic and infrastructure information from Zilla Parishad Offices in forms prescribed by the Department during the process of monitoring implementation of development schemes.

Both the Cells have statistical staff. The details are given below:

Planning Cell: Headquarters

- One Deputy Director
- One Statistical Officer
- Two Statistical Assistants

Planning Cell: Districts

- 31 Deputy Directors
- 59 Statistical Assistant
- 14 Computers

Statistical Cell: Headquarters

- One Statistical Officer
- Three Statistical Assistants
- One Statistical Inspector
- Two Computers

Statistical Cell: Districts

- 31 Computers

Statistical Cell: Panchayat Samiti

- 173 Statistical Assistants

3.6 Publications of DES

The principal publications of DES are listed in the table below:

Table 3.2: Publications of DES - Regular Publications

S.No	Name of Publication	First Issue	Current Issue	
		Year	Year	Price (Rs)
1	Statistical Abstract, Rajasthan	1958	Year	142
2	Basic Statistics, Rajasthan	1956	2001	80
3	District Statistical Out Line	1970	2002	75 Under Print
4	Socio- Economic Statistics	1995-96	2001 2002	48
5	Agricultural Statistics	1985-86	2000-01	42

S.No	Name of Publication	First Issue	Current Issue	
		Year	Year	Price (Rs)
6	Economic Review, Rajasthan	1994-95	2000-01	65
7	Some facts About Rajasthan	1980	2002-03	*
8	Annual Vital Report	1973	2002	*
9	T.R.S. Report of Crops	1972-73	2001	*
10	Annual Survey of Industries	1961	2000-01	82
11	Study of States Finances	1960-61	1998-99	*
12	Classification of State Budget	1977-78	2000-01	*
13	Census of State Govt. Employees	1956-73	2000-01	*
14	Budget at a Glance, Rajasthan	1994-95	2000	*
15	Budget Study, Rajasthan	1959-60	2003-04	*
* Un priced				

Table 3.3: Publications of DES - Adhoc Publications

S.No	Name of Publication	Current Issue	Price(Rs.)
1.	25 Years Agricultural Statistics of Rajasthan	1973-74 to 1997-98	36
2.	Population Projections Rajasthan	1991-2011	*
3.	Population-Facts & Figures Rajasthan	1961-2000	66
4.	Price Indices in Rajasthan	1985-97	*
5.	Whole sale Price Indices, Rajasthan	1957-2000	*
6.	Consumer Price Index number for Industrial workers	1995-99	*
7.	Report on Index Numbers of Industrial Production, Rajasthan	1998-2001	71
8.	Estimates of Net State Domestic Product of Rajasthan	1954-55 to 1997-98	*
9.	Estimates of Gross fixed capital formation in Rajasthan	1990-91 to 1998-99	*
10.	State Domestic Product & Capital Formation, Rajasthan	1997-98	*
11.	Estimates of Gross State Domestic Product of Rajasthan	1980-81 to 2001-02	*
12.	Fourth Economic Census Rajasthan	1998, Vol. I Vol.II Part I Vol.II Part.II	2814
13.	Women and Men in Rajasthan	1999	25
14	Some Development facts of Rajasthan	1956-1999	43
15	Survey of Housing condition 49th Round of N.S.S.	1993	*
16	Household Consumer Expenditure & Employment Situation 51st Round of NSS	1994-95	*
17	Household Consumer Expenditure & Employment Situation 54th Round of NSS	1998	*
18	Rajasthan in Indian Economy	2001	32
19	Employment and unemployment in Rajasthan 55th Round of NSS (State Sample)	1999-2000	*
20	Financial Structure of Rajasthan	1980-81 to 1999-2000	*
21	Household Consumer Expenditure and Employment and Unemployment	2000-01	*

S.No	Name of Publication	Current Issue	Price(Rs.)
	in Rajasthan (56th Round of NSSO)		
22	Inter state Economic Indicators	2004	*
23	Rajasthan in Figures	2004	*
* Un priced			

3.7 Manpower

3.7.1 Staff Strength of DES

The staff strength of DES and DSOs is given in the table below:

**Table 3.4: Sanctioned V/s filled up Total staff at DES Head Quarters and DSO's
(As on 07-11-2006)**

S.No.	Name of Post	State Head Quarter			District Statistical Offices		
		Sanctioned H.Q.	Number Working	Post Vacant	Sanctioned DSO's	Number Working	Post Vacant
1.	Director	1		1			
2.	Joint Director	3	3				
3.	Deputy Director	5	5				
4.	Assistant Director	5	3	2			
5.	Statistical Officer	4	3	1	32	21	11
6.	Analyst Cum Programmer	1		1			
7.	Programmer	1	1				
8.	Assistant Account Officer	1	1				
9.	Chief Legal Assistant	1	1				
10.	Office Superintendent	1	1				
11.	Office Assistant	8	8				
12.	UDC	17	16	1	08	06	2
13.	LDC	20	20		26	26	
14.	Sr. Personal Assistant	1	1				
15.	Personal Assistant	4	4				
16.	Stenographer	6	6				
17.	Steno-Typist	1	1				
18.	Accountant	1	1				
19.	Junior Accountant	2	2				
20.	Statistical Assistant	66(2)A ¹	66(2)A		98(3)A	94(3)A	4
21.	Statistical Inspector	17	17		79(3)A	51(3)A	28
22.	Computer	31(7)A	16(7)A	8	30(7)A	13(7)A	17
23.	Librarian	1		1			
24.	Assistant Librarian	1	1				
25.	Junior Artist	2	2				
26.	Jamadar	1	1				

¹ A = Abeyance

S.No.	Name of Post	State Head Quarter			District Statistical Offices		
		Sanctioned H.Q.	Number Working	Post Vacant	Sanctioned DSO's	Number Working	Post Vacant
27.	Class IV Worker	30	30		43	41	2
28.	Machine Operator	1	1				
	Total	233(9)	211(9)	15	316(13)	252(13)	64

The distribution of staff of the Statistics and Economics Cadre among the State's line departments is given in the table on next page.

Table 3.5: Department wise distribution of Statistics and Economics Cadre Manpower – In Position

S.No.	Name of the Department/Office	Director	Joint Director	Deputy Director	Assistant Director	Statistical Officer	Total
1	Planning Department	3	1	8	4	7	23
2	Directorate of Economics & Statistics	1	3	4	4	4	16
3	Department of Agriculture Census	1	-	-	1	1	3
4	Department of Panchayati Raj	1	-	1	-	2	4
5	Department of Women & Child Development	-	1	-	-	-	1
6	Department of Irrigation	-	1	-	-	1	2
7	Revenue Board	-	-	1	1	-	2
8	Social Welfare Department	-	-	1	-	1	2
9	DPIP	-	-	3	1	1	5
10	Tribal Area Development (Udaipur)	-	-	2	1	-	3
11	Tribal Area Development (Jaipur)	-	-	1	-	-	1
12	Chief Minister's Office	-	-	1	-	-	1
13	Ministry of Industries	-	-	1	1	-	2
14	Department of Commercial Taxes	-	-	1	-	-	1
15	Directorate of Local Bodies	-	-	1	-	-	1
16	Department of Science & Technology	-	-	1	-	-	1
17	Rajasthan Health System Development Project	-	1	-	-	-	1
18	Department of Health Services	-	-	1	-	3	4
19	Department of Animal Husbandry	-	-	1	-	-	1
20	Irrigation Department (Bikaner)	-	-	1	-	-	1
21	Education Department, Secreteriat Jaipur	-	-	1	-	-	1
22	Office of the Chief Planning Officer	-	-	15	-	1	16
23	Divisional Office	-	-	3	-	-	3
24	Department of Cooperation	-	-	-	1	-	1
25	Commercial Taxes (Jaipur)	-	-	-	1	-	1
26	Department of Food & Civil Supplies	-	-	-	1	-	1
27	Department of Tourism	-	-	-	1	-	1

S.No.	Name of the Department/Office	Director	Joint Director	Deputy Director	Assistant Director	Statistical Officer	Total
28	Department of Mines & Geology (Udaipur)	-	-	-	1	-	1
29	Transport Department	-	-	-	1	-	1
30	Disaster Management & Control (Jaipur)	-	-	-	1	1	2
31	Department of Ayurveda	-	-	-	-	1	1
32	Directorate of Manpower (Jaipur)	1	-	1	-	1	3
33	Forest Department	-	-	-	-	1	1
34	District Statistical Office	-	-	-	-	21	21
35	RUIDP (Jaipur)	-	-	-	-	1	1
36	Department of Urban Development	-	-	-	-	1	1
37	Swarnajayanti Urban Employment Scheme	-	-	3	4	-	7
38	Economic Policy & Reform	-	-	1	-	1	2
39	ML Verma TRI (Udaipur)	-	-	1	-	-	1
40	Directorate of Continuing Education (Jaipur)	-	-	-	1	-	1
	Total	7	7	54	25	49	142

3.8 Recruitment Process and Minimum Prescribed Qualifications

Under the State Statistical Service Rules Direct Recruitment is only at the initial post of Statistical Officer in the Gazetted Cadre to the extent of 50%. The remaining 50% posts are filled by promotion. For the subsequent higher posts there is no direct recruitment and all posts are filled by promotion of persons having at least 3 years' experience in the lower post.

For non-gazetted staff, direct recruitments are done at the post of Computer, the lowest post, and 50% on the post of statistical assistant. Similarly post of Statistical Inspector is the post of cent percent promotion: from Computers. The post of Statistical Officer is filled by 50% promotion from the post of SAs and the rest by direct recruitment through Rajasthan Public Service Commission (RPSC).

For the computers, qualifications are graduates in Mathematics/Economics/Statistics or Commerce (with Statistics), and for Statistical Assistant qualifications for direct recruitment are postgraduate in the abovementioned subjects with at least an II Class degree.

The recruitment process and minimum prescribed qualifications are given in the table below:

Table 3.6: Recruitment Process and Minimum Prescribed Qualifications

S.No	Name of Posts	Recruitment Procedure			
		Direct Recruitment		Promotion	
		%age	Prescribed Qualification	%age	Prescribed Qualification
(1)	(2)	(3)	(4)	(5)	(6)
1.	Computer	100	Bachelors Degree in Commerce (with statistics), Economics, Maths, Statistics from any recognized University or Certificate of Indian Institute of Statistics	0	Not Applicable
2.	Statistical Inspector	0		100	A second class Bachelors degree in commerce, Economics, Statistics, or Mathematics and three years experience as Computer
3.	Statistical Assistant	50	First or second class graduate degree in Economics, Statistics, Commerce, Maths	50	From Statistical Inspector with 3 years of experience as S.I
4	Statistical Officer	50	First class Graduate degree in Economics or Maths or Statistics or Commerce or a second class degree in the above subjects with	50	From Statistical Assistant with 3 years experience as SA

S.No	Name of Posts	Recruitment Procedure			
		Direct Recruitment		Promotion	
		%age	Prescribed Qualification	%age	Prescribed Qualification
(1)	(2)	(3)	(4)	(5)	(6)
			three years experience in statistical work		
4.	Assistant Director	0		100	From SO with Minimum 3 years of experience as Statistical Officer
5.	Deputy Director	0	-	100	Minimum 3 years of experience as AD
6.	Joint Director	0	-	100	Experience of 3 years on the post of a Deputy Director
7.	Director	0	-	100	Experience of 3 years on the post of Joint Director

3.9 Qualifications of Current Staff

All staff have the minimum prescribed qualifications.

3.10 Common Statistical Cadre

The State has a common Statistical Cadre governed by the Rajasthan Statistical Service Rules. The Secretary to the Government, Statistics & Planning Department, controls the gazetted cadre while the director of Economics & Statistics controls the non-gazetted cadre under the State Statistical Service Rules.

The total strength of the common cadre and distribution of Cadre staff across line departments and DES is given in Table 3.5 above.

There is a considerable degree of 'in-breeding' in the service both at the subordinate and higher levels of the cadre. This is primarily a result recruitment rules related to entry point recruitment. For example, in the Gazetted cadre, the entry point is the Statistical Officer and for the subordinate service the entry point is Statistical Assistant and Computer. Whereas direct recruitment is in vogue for the posts of Computer and statistical assistant in the subordinate cadre, in the gazetted cadre direct recruitment is practiced for the post of Statistical Officer but within the quota fixed for direct recruitment as per the recruitment rules.

No cadre review has taken place for over a decade.

4. STATISTICAL ACTIVITIES IN THE STATE

This section attempts to make an assessment of Rajasthan's statistical capabilities primarily from the outputs perspective, that is, extent to which the core 20 statistical outputs listed in the Terms of Reference are responsive to needs in terms of (i) the data's coverage, periodically, and timeliness, (ii) integrity and quality of disseminated data and (iii) accessibility of data by government departments / agencies and civil society through publications and other modes.

The assessment of the state's statistical capacities has also been done from the input perspective, that is, in terms of human and machinery (IT) resources and the institutional context as it relates to issues of coordination. While this is reported in this Chapter in a capsule form, a detailed input- based assessment is given in chapter 6 and 7.

4.1 Statistical Activities: Key Characteristics

4.1.1 State Domestic Product Estimate

The State makes regular estimates of State Gross & Net Domestic Products at current and constant prices and related aggregates like Net Domestic Product per capita, sectoral composition of GSDP etc.

a) Agency

The responsible agency for estimation of State Income Statistics is DES.

b) Principal outputs generated

The outputs generated annually are:

- (i) Gross/Net SDP at current prices
- (ii) Gross/Net SDP at constant (1993-94) prices
- (iii) GSDP by economic activity at current prices
- (iv) GSDP by economic activity at constant prices
- (v) NSDP by economic activity at current prices
- (vi) NSDP by economic activity at constant prices
- (vii) Economic and Purpose Classification of the Budget

c) Frequency

The frequency of data collection is annual. Annual estimates are made. In line with the national practice, estimates are released in four stages – Advance, Preliminary, Provisional and Final.

d) Methodology

The first estimates of State Domestic Product (SDP) were prepared in Rajasthan in 1954-55. This was on the basis of the methodology developed by the National Income

Committee, GOI. The methodology adopted now for estimation of GSDP from various sectors is broadly on lines prescribed at the national level by the Central Statistical organisation (CSO). The estimates are based on the concept of income originating within the geographical boundaries of the State. Under each industry group of income origin, estimates of Gross Domestic Product are derived first and then Net State Domestic Product (NSDP) are obtained by adjusting the value of Financial Intermediation Services Indirectly Measured (FISIM) and consumption of fixed capital (CFC) for each industry group supplied by CSO. Estimates of both GSDP and NSDP are made both at current prices and at constant 1993-94 prices.

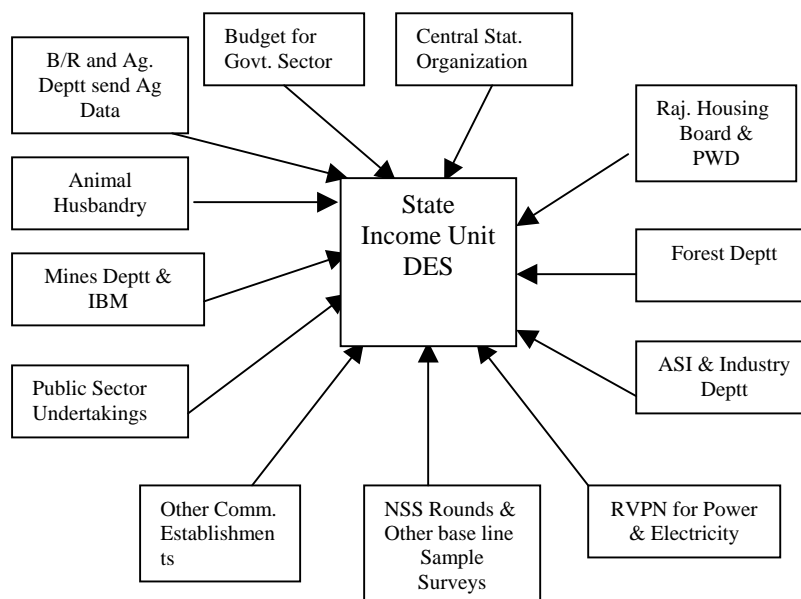
The DES prepares the estimates of State Domestic Product for all the 17 Sectors as per the national pattern. For preparing the estimates, concerned Departments collect the primary data through their field offices. For example, for Agriculture and Allied Sectors Board of Revenue, Agriculture Department, Forest Department, Animal Husbandry Department, Fisheries Department provide the basic data. In respect of Industry & Mining, data are used as available from Annual Survey of Industries, Director Industries and the Mines & Geology Department, and Indian Bureau of Mines. For estimates of Construction Sector secondary data from the Central & State Govt. Budget, Departmental Commercial Undertakings, Local Bodies, Non-Departmental Commercial Undertakings of both State & Centre, Autonomous bodies Private Limited Companies, other sources such as the Rural Debt & Investment Surveys of the RBI are collected by the DES. Similarly, for Electricity & Power, Transport, Communication the concerned Departments are approached by the DES to provide the basic data required. For supra-regional sectors the basic data is provided by the CSO. Barring the commodity producing sectors, and some other secondary and tertiary sectors, the DES depends on the CSO for supply of basic data, which in a number of cases has little relevance for Rajasthan.

Basic Unit, for which data are collected for the preparation of estimates of SDP, differs according to the Sectors. For Agriculture the data are collected from field level and estimated from village to district to state level; for Forest it is from Forester Circle upwards through Range to State level; for Animal Husbandry it is the number of animals in different Category, in Fisheries it is water bodies, in Industries it is the Factory. For Mines the basic Unit is the Mines and Quarries. In other Sectors it is the institution or the Household or the Number of workers employed. For supra-regional sectors estimates are prepared by the CSO and supplied to the State Directorate.

e) Data Flow

This is illustrated in the chart below.

Chart 4.1: Data Flow – GDSP Estimates



f) Time lag in release of data

The time lag in dissemination of estimates of SDP is as follows:

- Quick Estimates – 12 Months
- Provisional Estimates – 24 Months
- Final Estimates – 36 Months

g) Publications

The following publications report data on State Income:

Table 4.1: Publications Reporting State Income Statistics

Publication	Regular/Ad Hoc	Periodicity	Latest Publication	Number of Copies
Economic Review	Regular	Yearly	2004-05	2000
Budget Study	Regular	Yearly	2005-06	1000
Budget at a glance	Regular	Yearly	2005-06	1000
A comparative Study of States Finances	Regular	Yearly	2004-05	80
Economic and purpose classification of State Govt. Budgets	Regular	Yearly	2004-05	80

h) Interactions with other agencies

DES interacts with various offices in the State Government on a regular basis for obtaining data required. It also interacts with CSO to obtain ASI data relating to

Rajasthan, data on contributions of supra-regional sectors, etc. and in reconciling GSDP estimates with CSO's own estimates.

i) Statistical Returns used

Annual, non-statutory returns are used to collect the data. Some important offices from which data is collected are:

1. Director of Agriculture: Crop area, production and inputs
2. Agricultural Marketing Committees: Prices of agricultural commodities
3. Principal Chief Conservator of Forests: Production and value of forest produce
4. Commissioner of Fisheries: Production and prices of fish
5. Local Bodies: Compensation to employees
6. CSO: Supra-regional sectors, various norms, ratios
7. Other Central Ministries: Wholesale price indices, mineral production, etc.

j) Manpower employed

The following staff is deployed for estimation of State income:

Table 4.2: Staff Deployed for GSDP Estimation

Staff	Number
Joint Director	1
Deputy Director	1
Assistant Director	1
Statistical Officer	1
Statistical Assistant	11
Statistical Inspector	7
Comp	2
Total	24

k) IT tools used

Four desktop computers are available for this work.

l) Quality of data

The limitations inherent in the individual data series that provide inputs to SDP estimation affect the quality of SDP estimates. The data quality suffers because of use of old indices / ratios related to agriculture and allied fields - for example, old ratios / rates relating to agriculture and livestock is used in computation of SDP as these ratios are not updated by the State;

4.1.2 Capital Formation and Savings

Estimates of Gross Fixed Capital Formation are compiled for the public and the private sector. The estimates are available from the year 1970-71 onwards. The estimates are prepared for all the 17 Sectors for which the State Income Estimates are prepared. Estimation of savings is not done

a) Agency

The agency responsible for collection, compilation and release of the estimates is the DES.

b) Outputs generated

Estimates of GFCF for the public and private sector are the principal outputs

c) Frequency

The frequency of data collection is annual.

d) Methodology

Estimates of Gross Fixed Capital Formation (gross addition to fixed assets in stock during the accounting year) are made as per methodology provided by CSO, by assets, by industry of use and by type of institution. Assets are classified as buildings, roads and bridges, other constructions, plant and machinery and transport equipment. Classification by industry of use follows the standard pattern, viz., agriculture and allied activities, forestry and logging, fishing, mining and quarrying, manufacturing, construction, electricity, gas and water supply, transport, storage and communication, banking and insurance, trade, hotels and restaurants, public administration and other services. Additions to non-reproducible tangible assets such as land, mineral deposits and the natural growth of plants trees is not included. However, outlays on improvements of land and development or extension of mining sites, timber teaks and plantations are taken as part of capital formation. Outlays on incomplete construction works incurred during the year are included.

The data sources for obtaining data for estimation of GFCF are:

i) *State Government Departments and Departmental Undertakings*: The sources of data are the budget documents of the State Government (covering the administrative departments and their departmental enterprises). As there is no provision for depreciation in the budgets of State Government Departments, no attempt is made to prepare estimates of Net Capital Formation.

ii) *Non-Departmental Undertakings*: These comprise (a) Government companies in which not less than 51 per cent of the paid up capital is held by government and subsidiaries of government companies, and (b) statutory corporations. The sources of data for estimating GFCF from NDUs are the annual reports/accounts of the concerned Boards/Corporations. Data given in the schedules of fixed assets are used to prepare estimates of GFCF.

iii) *Local bodies*: Data are collected from Panchayats and Municipal bodies annually on capital expenditure and consumption

iv) *Private Sector*: For the private sector, the major source of information is the All-India Debt and Investment Survey (AIDIS), 1991-92. State level data is also collected from Annual Survey of Industries, Rural Debt & Investment Survey, Livestock

Survey and Agricultural Inputs Survey. For private sector construction activities, the estimates are built-up on the basis of balance sheets of construction companies registered with Registrar of Companies in the state. The data in respect of private companies is adjusted for non-reporting. Private Sector Undertakings from which the data are collected are the undertakings and institutions making expenditure on creation of durable assets. Capital formation by Households Basic units and the households are estimated through Sample Surveys.

e) Publications

There are no publications specific to GFCF. However, data is provided in Economic Survey prepared by DES. The GFCF estimates have been released for the year 2003-04.

f) Time lag in release of data

The time lag in data dissemination is 24 months for State and Departmental Undertakings and 60 months for NDCUs

g) Interactions with other agencies

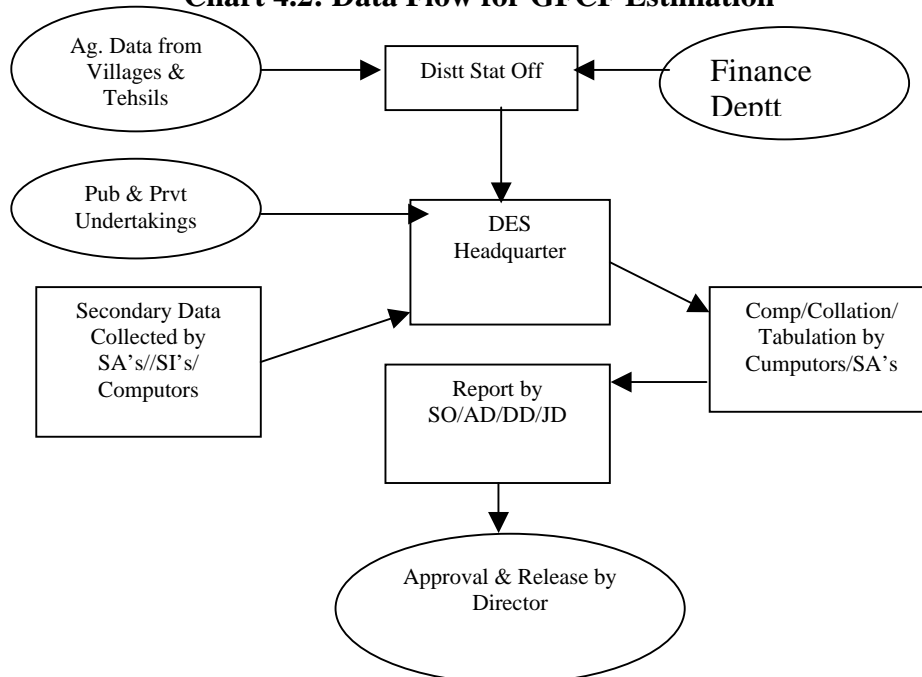
Interaction takes place annually with non-departmental undertakings, municipalities and District Panchayat Offices, private sector, and CSO for collection of data for GFCF estimation.

h) Statistical returns

Data are collected annually in prescribed formats, which are non-statutory.

i) Flow of Data : This is illustrated in the chart below.

Chart 4.2: Data Flow for GFCF Estimation



j) Manpower employed with channels of reporting

The staff deployed for GSDP estimation are also deployed for GFCF estimation.

k) IT tools used

No IT equipment is available specifically for preparation of these estimates. The PCs available for SDP work are used.

l) Data Quality

The data quality suffers due to the following reasons:

1. The follow-up surveys of the enterprises do not provide data for actual addition to fixed assets. It provides the data only for gross assets, which do not satisfy the definition. The different controlling authorities are not able to improve the reporting of data and also its quality. Such is in the case of mining, construction, cooperatives, etc.
2. Data on type of assets is not available, so estimates by type of assets could not be attempted for the supra regional and private sectors.
3. The private corporate sector covers all enterprises working in the state registered in the office of the Registrar of Companies. But some of these companies are working in other states also. Due to non-availability of data regarding working outside the boundaries of Rajasthan, no adjustment for this could be done. Similarly, data in respect of companies registered outside Rajasthan but working in the state is not included as state wise data for these companies are not available.

4.1.3 District Domestic Product

a) Agency

DES, is responsible for preparing and releasing estimates of District Domestic Product.

b) Principal Outputs

The principal outputs planned to be generated are:

1. Net District Domestic Product at current prices
2. Net District Domestic Product at constant (1993-94) prices
3. Per capita Net District Domestic Product at current prices
4. Per capita Net District Domestic Product at constant (1993-94) prices

c) Frequency

The frequency of data collection is annual

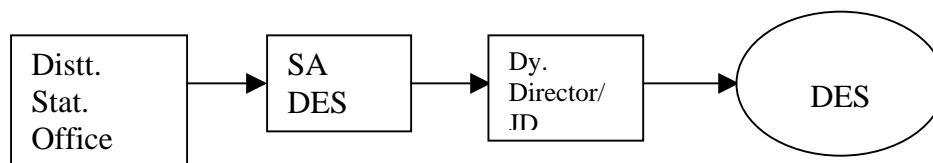
d) Methodology

Two approaches are followed. For commodity producing sectors, the value of product is estimated from the quantity produced and its price at District level. Estimates of district income for secondary and tertiary sectors are prepared by allocating the State income among the districts using appropriate indicators. Some of the indicators are state-based and others are provided by CSO.

e) Data Flow

DES collects district production data from the concerned organisations, and prices from the DSO as illustrated in Chart 4.3 below.

Chart 4.3



f) Interaction with other offices

The work of gathering data for the estimation DDP involves interaction between DES and DSOs, and between DSOs and a number of district level government offices, production units in private sector, and shops (for collection of prices), among others. DES also interacts with other State Departments who provide district wise production estimates.

g) Publications

Three series have been published till date

h) Time Lag

The time lag in data dissemination is 36 months.

i) Manpower used

The manpower engaged in compilation of State Domestic Products is also working for statistical activities related to estimation of District Domestic Products.

j) IT used

No IT equipment is available for this work. Work is done manually.

k) Quality

Data quality suffers as (i) the the required data for secondary and tertiary sectors are not available, which results in inadequate coverage; (ii) input values are not available

district wise; (iii) for many sectors like animal husbandry and forestry the output is allocated - instead of this the data should be collected District wise for items like cost of repairs and maintenance, marketing charges, livestock feed etc.; and (iv) no DDP-specific training has been provided to any staff although they have been provided with CSO manuals detailing the methodology and all the related processes to be followed.

4.1.4 Contribution of Local Bodies

Contribution of local bodies - Panchayats and Municipalities - to GSDP is estimated and included in the total GSDP estimates.

a) Agency

The estimates of the contribution of local bodies are made by DES on the basis of data collected by the DSOs and DES.

b) Outputs generated

The principal output generated is the value of State Domestic Product attributable to local bodies

c) Frequency

The frequency of data collection is annual.

d) Methodology

The estimate of contribution of local bodies towards GSDP is prepared using the income approach. The compensation to employees is the only factor income that is considered. The budgets of local bodies are collected by DSOs. This provides estimates of expenditure by local bodies under various purpose categories. Attempts are made to obtain data from all Municipalities, Zilla Parishads, Panchayat Samitis and a sample of Panchayats consisting of one Gram Panchayat in each block.

e) Time lag in release of data

The time lag in dissemination of estimates of SDP is as follows:

- Quick Estimates – 12 Months
- Provisional Estimates – 24 Months
- Final Estimates – 36 Months

f) Publications and latest issues

There is no publication exclusively for reporting on contributions of local bodies to SDP. However, the data reported in the Economic Survey prepared by DES.

g) Interactions with other agencies

DES Staff interact with local bodies falling in their respective Districts for collection of required data and transmitting this to DES for further processing.

h) Statistical returns

Data are collected annually in prescribed formats, which are non-statutory.

i) Manpower engaged

The staff involved in the preparation of the estimates of SDP performs this function also

j) IT tools used

No IT equipment is provided the data is handled manually or when PCs available for SDP work are available they are used

k) Quality

The quality of data suffers due to three main reasons, among others. First, the accounting and bookkeeping systems of local bodies are poorly maintained, which adversely impacts on the quality of data provided by the local bodies to DSOs and DES. Second, there is inadequate response to requests for data. Third, expenditure of local bodies on outsourced services and activities is not provided by the local bodies to DES.

4.1.5 Major fiscal data relating to Budget Estimates

Information on major fiscal variables, viz., revenue and expenditure and fiscal balance is made available through the annual Budget of the State Government. DES prepares a Budget in Brief document accompanying the detailed Budget documents

a) Agency

The State's Finance Department (Budget) has responsibility for generating fiscal data related to budget estimates. It monitors state revenue, expenditure, and fiscal balance for the State and compiles and tabulates the required data for monitoring and budget formulation.

The DES prepares the economic and purpose classification of the budgetary data, and analyses the data for purposes of preparing the Economic Review for the State.

b) Outputs generated

The principal outputs generated are the annual budget documents released by the Finance Department; and monthly reports on receipts and expenditure used for official purposes.

DES brings out two budget related publications on an annual basis. These are:

1. Economic and Purpose Classification of Budget
2. Economic Review

c) Frequency

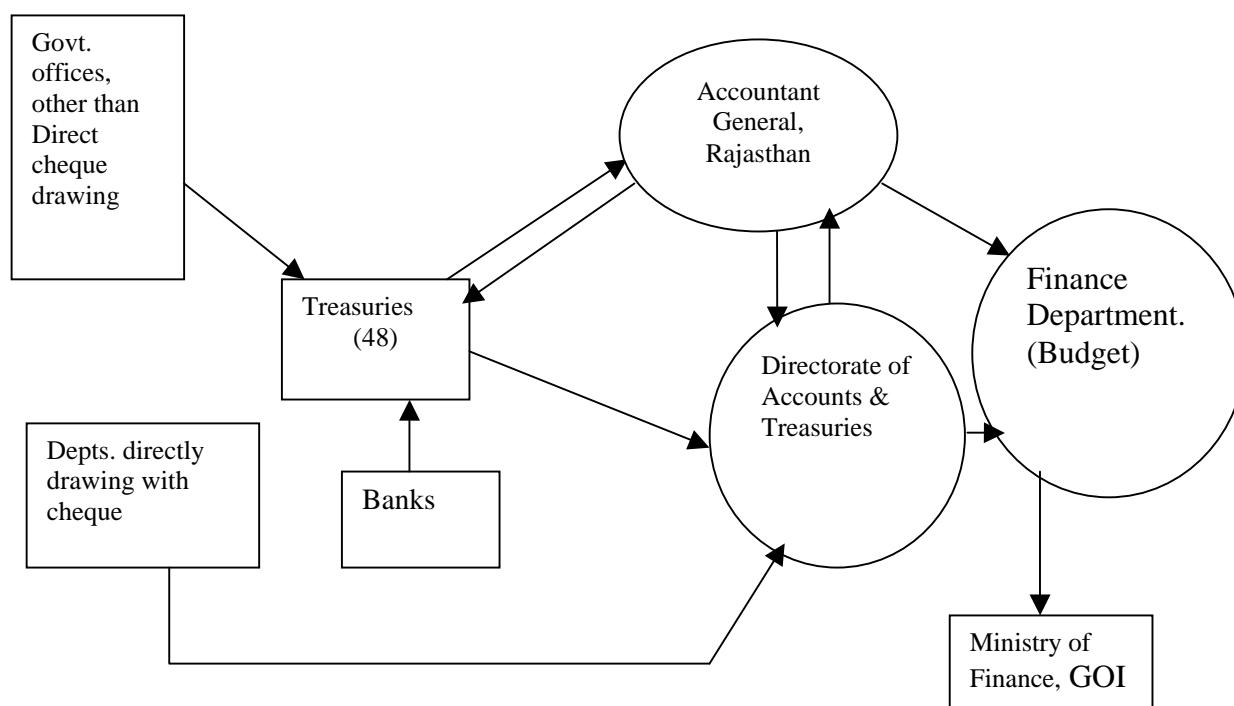
The frequency of data collection, compilation, tabulation, release, and publication is annual.

d) Methodology

The basic reporting units are the District Treasuries who report all government transactions (payments and receipts) to the Accountant General as well as the Directorate of Accounts and Treasuries on a daily basis. In the case of receipts and expenditure through banks, the respective banks send a copy of the vouchers/challans to the concerned Treasury. In the case of departments, whose officers are authorised to draw cheques directly instead of going through treasuries, the transactions are reported to the Directorate of Accounts and Treasuries soon after the cheques are encashed. All the data is consolidated both in the Accountant General’s Office as well as the Directorate of Accounts and Treasuries. Reconciliation of the data at AG Office and those in the Directorate of Accounts and Treasuries is done every month. The reconciled data is sent to the Finance Department by the second week of every month. The Purpose and Economic Classification of the budget is done by DES on the basis of the Budget data using the methodology followed at all India level and approved by the CSO.

e) Data Flow : This is depicted in the chart below:

CHART 4.4 – DATA FLOW



f) Time lag in release of data

The time lag in data dissemination is less than a month.

g) Publications

The publications related to fiscal data are given in the table below:

Table 4.3: Budget Related Publications

Publication	Periodicity	Latest Issue	No. of copies	Priced	Mode
i) Budget documents	Annual	2005-06	NA	No	Print
ii) Budget in Brief	Annual	2005-06	NA	No	Print

h) Interactions with other agencies

There is a regular flow of information between various government offices, treasuries, banks, Accountant General's Office and Directorate of Accounts and Treasuries.

i) Statistical returns

No statistical returns are prescribed. All vouchers are sent by the treasuries to the office of Accountant General under intimation to the Directorate of Accounts and Treasuries.

j) Manpower engaged

The staff of the Finance and Accounts Service manning the Directorate of Accounts and Treasuries and the field offices are engaged.

k) IT Tools used¹

The compilation of basic data by the Accountant General is computerised. IT tools available in the Finance Department and DES are used for data compilation and tabulation.

(l) Quality

The data on fiscal statistics is reliable, accurate, and adequate. It is released with negligible time lag.

4.1.6 Annual Survey of Industries

The Annual Survey of Industries is the principal source of data on production, value added and other structural and technical parameters in organised manufacturing industries. These data are widely used, inter alia, in the estimation of GSDP.

¹ Information on inventory of current IT resources – hardware and software – was not provided by the Department of Finance

a) Agency

DES Rajasthan is the agency with the responsibility of participating in ASI

b) Outputs generated

- i) Distribution of factories by variables like employment, fixed capital, inputs (fuel and materials), gross output and gross and net value added at 2 and 3 digit level of industrial classification of NIC 1998
- ii) District level economic aggregates of important variables like number of factories, fixed and invested capital, employees and emoluments, gross output and net value added

c) Frequency

The frequency of data collection is annual for factories covered under the Factories Act, and monthly for the small, medium and large industries not covered by the Factories Act

d) Methodology

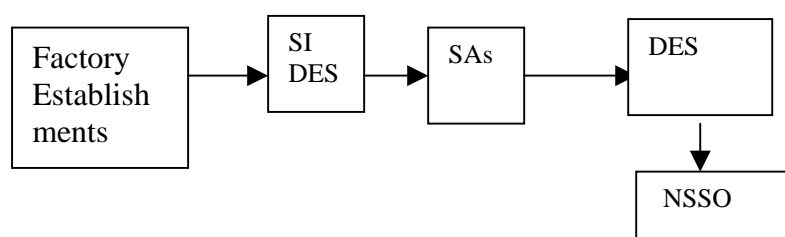
The DES conducts Annual Survey of Industries every year for residual sample not covered by NSSO (FOD). The Survey covers Factories , registered under section 2m(i) and 2m(ii) of Factory Act, 1948 employing 10 or more workers and using power and those employing 20 or more workers but not using power in any of preceding 12 months. The District Staff of the DES collect the information from the Factories to be covered and obtain a copy of the schedules filled by the factories covered by NSSO (FOD) and thus cover 100% of the Factories for the Annual Report brought out by the DES.

The size of State sample was 21.26% and 32.27% of the ASI frame units of the state in 2002-03 and 2003-04 respectively.

e) Data Flow

This is illustrated in the chart below.

Chart 4.5: Data Flow for ASI



f) Time lag in release of Data

Time lag in data dissemination is 48 months.

g) Publications

The data are reported in the Report on Annual Survey of Industries published by DES

h) Interrelationship with Agencies and Data flow

DES interacts with the factories and with the NSSO for the conduct of Survey. The Data flow is as shown below:

i) Statistical Returns Used

Returns supplied by the NSSO are used.

j) Manpower Deployed

The following staff is deployed:

Table 4. 4: Manpower

Designation	No. of Staff
Deputy Director	1
Statistical Officer	1
Statistical Assistant	12
Statistical Inspector	4
	18

k) IT Tools Used.

No IT equipment is available for this work. Computers available for other work are used when feasible.

l) Quality

The data quality is adequate.

4.1.7 Index of Industrial Production (IIP)

a) Agency

DES prepares the Index of Industrial Production with base year 1993-94, which is being revised to 1999-2000.

b) Principal Output generated

IIP for Manufacturing, Mines and Minerals and Electricity Groups

c) Frequency

The data collection frequency is monthly.

d) Methodology.

Monthly data on selected industrial products is being collected from all the registered factories and item wise monthly and annual estimates of IIP are prepared. The Indices are prepared with base 1993-94=100, which is being revised to 1999-2000=100. IIP are prepared for Manufacturing, Mines and Minerals and Electricity Groups. The weights adopted are value of output at 2-digit level, 3-digit level, and 4-digit level respectively for these groups.

The State Directorate does not prepare Index of Industrial Production for the unorganised sector.

e) Time lag in release of Data

Time lag in data dissemination is three months.

f) Publications

The IIP is reported in the Economic Survey annually. Additionally, IIP estimates are cyclostyled for dissemination on a monthly basis.

g) Staff Deployed

The staff deployed for ASI also works on IIP estimation

h) IT tools

IT tools available with DES are used for final estimation but data is compiled manually.

i) Quality

The data quality is adequate.

4.1.8 Crop area and production statistics

a) Agency

The agency responsible for collection, compilation and release of crop area and production statistics are: (i) DES, which is the State Agricultural Statistics Authority (SASA). In the capacity of SASA, the DES is the clearinghouse for all agriculture statistics, i.e., crop forecasts, land utilization, Jinswar, agriculture table's etc. sent to the Ministry of Agriculture, GOI; and (ii) the Board of Revenue that collects statistics of Crop Area and Production and Land Use (Nine fold Classification).

b) Principal data generated

The principal outputs are:

Land use statistics as per nine fold classification

- Estimates of area under kharif, rabi and Zaid rabi crops at State and District and Tehsil levels
- Estimates of average yields of major Kharif, Rabi and Zaid Rabi.
- Estimates of production of various agricultural and horticultural crops
- Indices of the following as per Agricultural Tables prescribed by the Ministry of Agriculture; the Tables are sent to the Ministry of Agriculture:
 - Area;
 - Production;
 - Productivity;
 - Farm Harvest Prices;
 - Net Area Sown;
 - Gross Area Sown;
 - Net and Gross Area Irrigated.

c) Frequency

The frequency of data collection and estimation of crop area and yield statistics is given below:

- Land Use Statistics: Annual
- Crop Area and Production Statistics: Seasonal, in each season (Rabi, Kharif, Zaid Rabi)

d) Methodology

The Board of Revenue collects statistics of Crop Area and Production and Land Use (Nine fold Classification). The Board issues Forecasts of Area and Production, which after approval of the DES are sent to the Govt. of India.

Crop area estimates are made on the basis of crop area data maintained by the Patwari in the Crop Register (Jinswar). This data is based on crop area enumeration (Girdawari). The information is verified by the Land Records Inspector (LRI) and is sent to the Tehsildar who forwards the data to the Board of Revenue through the District Statistical Officer. Crop area forecasts are provided three times in a season.

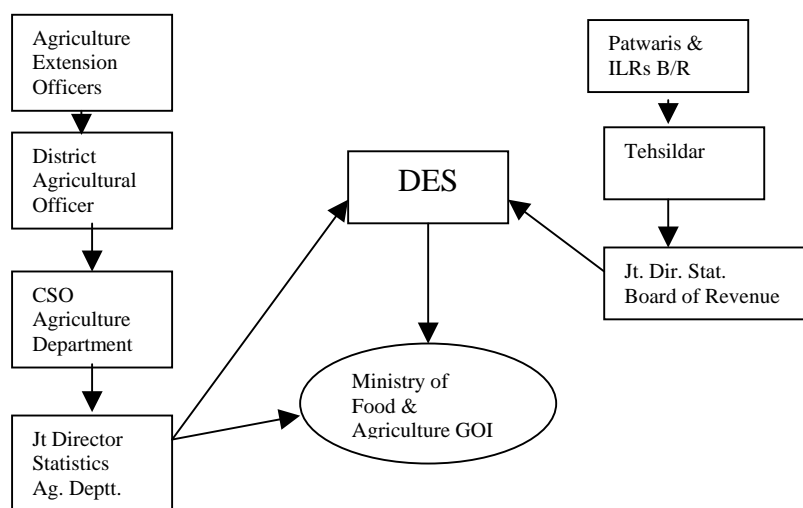
To get precise estimates of area under principal crops, crops under irrigated area and under unirrigated area, area under high yielding varieties, and to obtain nine fold classification of land utilization the scheme of Timely Reporting of Area is implemented by the DES. For this special girdawari is held 15 days prior to normal girdawari in all three seasons, Rabi, Kharif and Zaid.Rabi. For preparing the estimates 20 percent villages are selected by linear systematic sampling. The estimates are prepared both by ratio and unbiased method along with break up for irrigated and un irrigated area for each crop in each season. The response for the three seasons Kharif, Rabi and Zaid Rabi has been 97.93%, 96.81% and 89.67% respectively for 2004-05. A total of 8,723 villages were selected.

For estimating **crop production**, the Board of Revenue conducts General Crop Estimation Surveys (GCES) for estimating yield per hectare of major crops. The methodology is to select at least 2-3 villages in each Tehsil for GCES and 10 villages in each Tehsil for the Crop Insurance Scheme (CIS). In the selected villages at least 2 fields (Khasra) are selected randomly. The crop in demarcated plots is harvested and dried and weighed to arrive at the yield. Data collected from the villages is compiled and collated for the Tehsil/District/State in the prescribed Tables for further processing. The number of experiments conducted by the Board of Revenue for GCES and CIS respectively are 13,870 and CIS 23,000. After entry of data collected from villages, the information is prepared at Tehsil/District/State level.

e) Data Flow

This is depicted in the Chart below:

Chart 4.6: Data Flow for Crop Area and Yield Estimates



f) Time Lag

There is a time lag of 12 months in release of final estimates for crop area and production. This is due to delay in receiving reports by the Tehsil from the patwaris and sometimes receipt of inaccurate reports from patwaris that have to be referred back to them for corrections and reconciliations as required. This results in delays in compilation of reports at the Tehsil level for onward transmission to the Land Records Section of the District Collectorate.

g) Manpower Used

Following agencies and staff indicated against them are involved in this activity.

Table 4.5: Agency and Manpower in Place²

Designation	No. of Staff
Board of Revenue	27
Department of Agricultural Census	3
Total	30

h) Use of IT

The IT use scenario is as follows:

- **DES:** There are no computers available in DES for Agricultural Statistics.
- **Board of Revenue:** The Board of Revenue has two Celeron TM PCs with Printer for processing Crop Estimation Survey data and the Rainfall data.
- **Agriculture Department:** The Agriculture Department has computers up to sub-district level duly net worked up to the State level.

i) Publications.

DES, Board of Revenue, and Agriculture Department have regular annual publications reporting crop area and production statistics, and other agricultural statistics.

j) Inter relationship with Agencies and Data Flow.

All the three – DES, B/R, and the Agriculture Department interact among themselves and the DES and the Agriculture Department interacts with the Ministry of Food & Agriculture for operational and theoretical issues related to collection of crop area and production, and other agricultural statistics.

k) Quality

The data quality is adequate

4.1.9 Wholesale Price Index

a) Agency

The DES prepares the Index of Wholesale Prices with base 1952-53 for 59 items. The Index has now been revised with base 1999-2000=100. The Index is being released from January 2005 regularly after it is duly approved by state government.

b) Principal Outputs

The principal output generated is WPI based on price quotations for 384 items covering:

- Primary Articles: Food & Non Food Agricultural items, Minerals.
- Fuel Power Light & Lubricants,

² For details refer chapter 7.

- Manufactures.

c) Frequency

The frequency of data collection is monthly

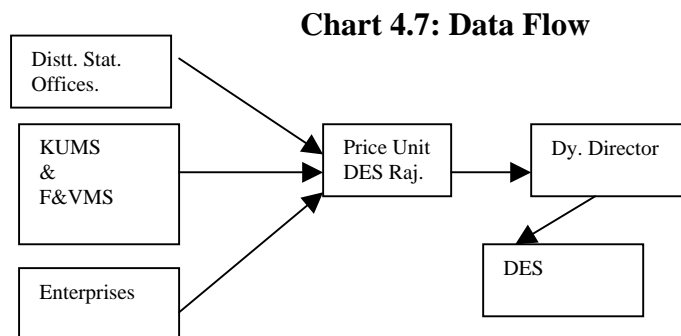
d) Methodology.

The index is based on prices collected every Friday from 79 Centres for agricultural and non-agricultural commodities. The Index is prepared for Primary Articles, Fuel, Power, Light & Lubricants, and for Manufactured Products.

Wholesale prices of essential commodities are also collected from all the District headquarters through the District Statistical Officers and 47 Krishi Upaj Mandi Samities. The index covers 86 commodities. These prices are used in estimation of SDP and are also sent to the CSO for estimation of NSDP.

e) Data Flow

This is depicted in the chart below:



f) Publications

Since January 2005, the WPI is getting reported in the Statistical Abstract

g) Time Lag

The time lag in data dissemination is six months

h) Inter relationship with Agencies

The DES interacts with the District Offices, Enterprises and the Krishi Upaj Mandi Samiti and the Fruits & Vegetable Mandi Samiti for collection of prices.

i) Statistical Returns Used

Non Statutory Returns prescribed by the DES are used.

j) IT Tools Used.

One Computer (HCL Pentium IV) is used.

k) Manpower Used.

The manpower deployed for WPI estimation consists of:

Table 4.6: Manpower

Designation	Staff No.
Deputy Director	1
Assistant Director	1
Statistical Officer	1
Statistical Assistant	4
Computer	2
Total	9

l) Data Quality

The data quality is adequate.

4.1.10 Consumer Price Index

This activity is not undertaken by DES. However, DSO collects prices on a weekly basis from four markets at Jaipur, and from two markets each at Ajmer and Bhilwara. Prices for the following major groups are collected:

- Prices for items covered under the following Major Groups are collected:
- Food.
- Pan, Supari, Tobacco and Intoxicants.
- Fuel & Light.
- Housing.
- Clothing, Bedding & Footwear

The collected prices are compiled on a monthly basis and forwarded to the Labour Bureau Shimla for estimation of CPI. The index is released on a monthly basis.

DES also collects weekly retail prices of 39 essential commodities from all the district headquarters through the District Statistical Officers. A monthly price review is sent to the Governor, Chief Minister and other Offices of the State Government.

Weekly Prices of Livestock feed and livestock products are also collected through the District Statistical Officers. The prices cover 86 commodities. These prices are used in estimation of SDP and are also sent to the CSO for estimation of NSDP.

Staff engaged for WPI compilation is also deployed for collecting prices.

4.1.11 Health, mortality, morbidity and family welfare statistics

The department of Health is organized in four Directorates. These are Directorates of

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(i) Public Health; (ii) Family Welfare; (iii) Aids Control; and (iv) IEC. Of these, the first three have a Statistical Cell under them manned by the staff of the common statistical cadre.

a) Agency

The responsible agencies are:

Health, mortality and morbidity statistics: Directorate of Public Health

Welfare Statistics: Directorate of Family Welfare

b) Principal Outputs generated;

The principal outputs generated are:

1. Number of Medical Institutions in Rural and Urban Areas;
2. Number of Beds and their Distribution for medical & surgery cases;
3. Number of beds for Men, Women and Children;
4. Distribution of Beds for different diseases – Cancer, Orthopaedic, TB, Maternity, Gynaecological, Skin and VD, Ophthalmologic, Mental, ENT, Infectious Diseases, Children & Others.
5. Number of Indoor and Outdoor patients treated – Men, Women and children
6. Result of Indoor Patients – cured, relieved, died, disease wise
7. Number of Surgical Operations by Disease, sex, cured, relieved, discharged otherwise, died.
8. Number of Government Employees by sex, status (Gazetted or non gazetted), pay scale wise.
9. Maternal Deaths by causes;
10. Medical Certification of cause of Death – number of certificates issued.
11. Snakebite cases by sex and age group;
12. Number of IPD and OPD Deaths by cause and sex. (Monthly)
13. Report on Epidemics. (Weekly).
14. Deaths due to use of Insecticides;
15. Deaths due to dog bites and hydrophobia;
16. Village wise – sub Centre wise Population, Number of people adopting Family welfare methods, type of method used.
17. Birthrate, Infant Mortality Rate, Maternal Mortality Rate, Couple Protection Rate.
18. Immunization provided.
19. Monthly Report on Maternal & Child Care – number of cases attended, immunization provided etc. - centre wise.

c) Frequency

The reports are received monthly from the field and are compiled quarterly and annually.

d) Frequency

Frequency of data collection is monthly.

e) Methodology

(i) Health Statistics:

Data is collected on indoor/outdoor patients, patient beds, sex-wise classification of 159 diseases, age and sex-wise classification of 18 diseases and category-wise classification of surgery cases. This classification has about 3300 columns and information is collected from all 2504 medical institutions. Information is also collected and prepared for various seasonal diseases. Coding and collection of about 25,000 Death Certificates is also done.

The basic unit of collection of statistical data is the Sub-centre (SC). A monthly report is generated in the prescribed format. These monthly reports prepared by SCs are submitted to PHCs where these reports are consolidated and forwarded to CHC, which in turn sends the monthly consolidated reports to the Chief Medical and Health Officer. The reports from the CHCs and hospitals received by the Chief Medical and Health Officer are consolidated at the District level and submitted to the Regional Joint Director who after scrutiny, transmits the data to the Directorate Medical Services. The State level reports are prepared, in the statistical division, from the District reports after thorough scrutiny and submitted to the Central Bureau of Health Intelligence, GOI. The schedule of activities is as follows:

Sub centres prepare the report from 25th of previous month to 24th of the current month and submit them at PHC level meeting held on every 25th of the month. All PHCs submit their report in CHC meeting on 1st / 2nd of the month. All Districts submit their reports to the concerned programme officer (like family welfare, NLEP, AIDS, TB, and NPCB) by 10th of every month. Information relating to family planning activities and immunization are sent to the government of India followed by a detailed report.

Medical statistics include number of (i) indoor and outdoor patients treated for different diseases; (ii) communicable and non-communicable disease cases; (iii) TB and malaria cases; (iv) number of cataract operations done; (iv) active and new cases of leprosy; (v) attacks and deaths due to epidemics like dysentery, Jaundice etc.

(ii) Family Welfare Statistics:

The Director, Directorate of Family Welfare and Public Health is responsible for collection, compilation and dissemination of data pertaining to immunisation, anti-natal care, delivery, post-natal care, family welfare, child health and demography. Data on family welfare programmes are collected and compiled at the SC level in the prescribed format and monthly reports prepared. These reports are forwarded to PHC, which consolidates the reports received from all SCs. The consolidated PHC reports are then sent to CHC and from there to the Chief Medical and Health Officer who in turn prepares District report and sends it to the Regional Joint Director. The State level report is prepared and sent to Ministry of Health and Family Welfare, GOI, with a copy to the Principle Secretary, Health and Family Welfare.

The monthly report covers family welfare related data viz. (i) anti-natal care, (ii) natal care, (iii) pregnancy outcome, (iv) postnatal care, (v) maternal death, (vi)

immunisation, (vii) Vitamin A administration, (viii) childhood diseases, (ix) infant and child deaths, (x) contraceptive services, (xi) abortions, (xii) facilities including availability of transport, X-ray machines and cold chain equipments. It also covers the progress achieved under national programmes viz. Tuberculosis, Malaria, Leprosy, Blindness, Disabilities and Family Welfare & Reproductive Child Health (RCH). Quarterly and Annual reports are also prepared.

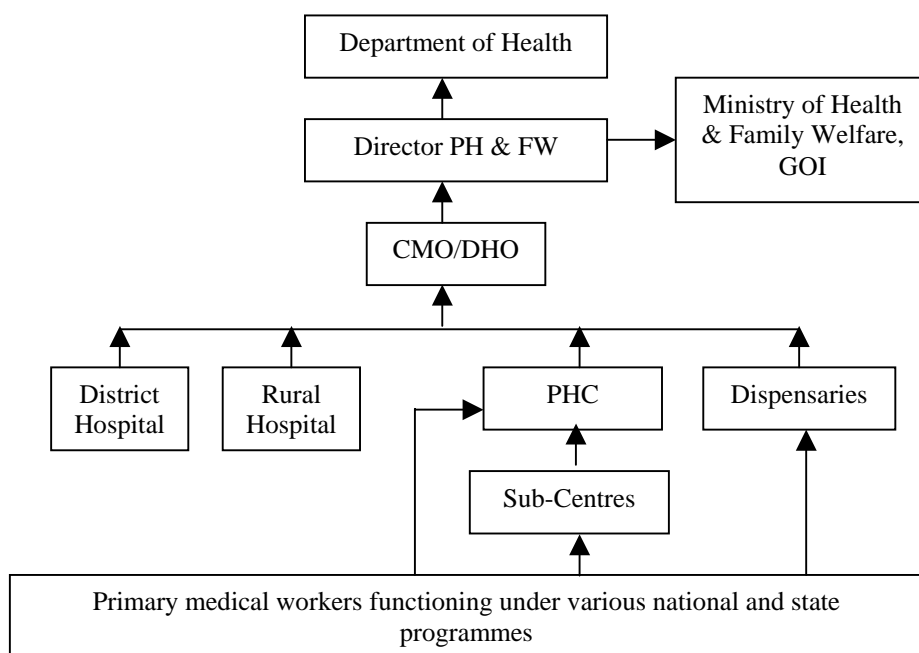
(iii) Aids Control

Statistics for HIV positive cases are collected from Aids control centres, located in each district and major govt. hospitals. These reports are sent by the Centre directly to the Project Director Aids Control, where compilation of HIV positive cases are done at state level.

f) Data flow

This is depicted in the chart below:

CHART 4.8 - FLOW CHART FOR REPORTING RCH MIS



g) Publications

The Directorate of Medical & Health brings out an Annual Administration Report and the data are provided to DES for publication.

h) Time Lag

The time lag in data dissemination is six years.

i) Publications

The Directorate of Medical & Health brings out an Annual Administration Report and

the data are provided to DES for publication in Statistical Abstracts

j) Manpower engaged

The manpower of the Statistical Cell of the Directorate of Family Welfare is deployed for Family Welfare Statistics. The staff details are given in the table below:

Table 4.7: Staff Deployed for Health and Family Welfare Statistics³

Designation	Staff No.
Department of Women and Child Development	1
Rajasthan Health System Development Project	1
Department of Health Services	4
Department of Ayurveda	1
Directorate of Public Health	17
Directorate of Family Welfare	245
Total	269

k) IT Tools used

The Directorate is computerized and there are PCs at sub divisional level duly networked with the central server and the networked printer with facilities for on line information. The software is provided by the NIC under an MOU.

l) Quality

The data suffers due to poor response rate on many health parameters. Also, there are some exclusions, for example, medical practitioners in private sector and voluntary/non-government organizations are excluded from the list frame for data collection on morbidity, mortality, pre-natal and post-natal health care services. The data quality also suffers from the timeliness perspective given a time lag of 72 months, as a result of which, the statistical outputs related to performance of schemes/programmes are of limited use to policy makers. Also, the absence of benchmark surveys with respect to prevalence of diseases in the community limits the utility of data generated.

4.1.12 Education and literacy statistics

a) Agency

The agencies responsible for collection and compilation of education related statistics are:

1. ***The Directorate of Primary and Secondary Education:*** This has overall responsibility for educational statistics. In addition it has direct responsibility for collection and compilation of data with respect to Secondary and Higher Secondary education
2. ***Directorate of College Education:*** Data on college education is collected and compiled by this Directorate. Data regarding students in different colleges and

³ For details refer chapter 7.

Universities pursuing different courses is also available for Degree post-degree and higher levels from the Directorate of College Education.

3. **Directorate of Literacy and Continuing Education:** This Directorate collects data pertaining to the Literacy programs in formats prescribed by the National Literacy Mission, New Delhi.⁴
 - **Sarva Shiksha Abhiyan (SSA):** The state government is implementing the central scheme of Sarve Shiksha Abhiyan for achieving the targets of universalisation of primary education and to enroll 100% children of age group 6-14 years by 2010. SSA collects the required data for monitoring.
 - **All India School Education Survey:** This is a quinquennial activity. The survey is conducted jointly by the Ministry of Human Resource Development (GoI), the National Council of Educational Research and Training (NCERT) and the State Education Department.

b) Outputs

The principal statistical outputs are data on:

- Enrolment in primary and secondary education by sex, and by SC and ST categories
- Dropout rates by age –group, and class
- Statistics on teachers and school finances
- Literacy programmes
- Number of students in Colleges by area of study

The Directorates of Secondary & Primary Education maintain data pertaining to enrolment of children category of Institution (Aided, un Aided, Govt., Private), District wise, sex wise, age group wise, drop out rate class wise and age group wise. Data regarding number of teachers is also available. The data are provided to the Directorates by the Institutions monthly and are compiled quarterly and annually.

c) Frequency

The frequency of data collection is as follows:

- Enrolment - Annual
- Dropout rates - Annual
- School teachers/finances - Annual
- Statistical reporting under Sarva Siksha Abhiyan is monthly

d) Methodology

Educational statistics are collected from schools in the prescribed format MI-I with reference date of 30th September. The data is sent by schools to the Block Education Officer, who scrutinises and compiles data for the Block and sends it to the Statistical Cell of the concerned District. This Cell scrutinises the Block level data and consolidates the data for the District. The District level data for secondary and higher

⁴ At present the programme is being implemented in all 32 districts of the state.

secondary education is sent by the Cell to the respective Directorates of Education (Primary, Secondary & Hr. Secondary) and compiled by the staff of those Directorates. State level reports are generated, as required by the State and Central governments, by the respective Directorates. The final tables providing information on educational parameters are also sent by Education Department in prescribed forms ES-I to ES-IV to the Ministry of HRD.

Statistical information with respect to degree and engineering colleges is submitted by the respective institutions in prescribed forms to the Directorate of College Education where compilation of data is done and sent to the Ministry of HRD, Government of India.

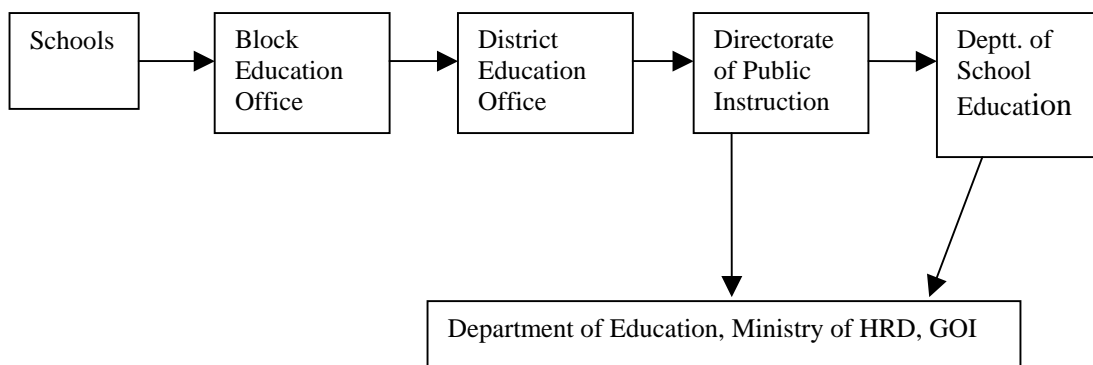
The data regarding Adult Education is collected by the District Education Committees from about 19,700 Centres. The data is sent by the District Education Officer to the Directorate of Adult Education every month. The Directorate releases the monthly Report. The data is collected through regular surveys conducted by the Department to monitor the Centres run by the Zila Saksharta Samiti, Non-Government Organizations and Panchayat Raj Institutions. Data is also collected through the process of external evaluation, which is assigned to independent organizations, such as, ORG, New Delhi, Center for Research & Planning, New Delhi, Bombay University, Jamia Milia Islamia University, New Delhi, State Resource Center Pune, ANSinha Institute Patna, etc. The data regarding beneficiaries is maintained for male, female, SC and ST district wise.

Data regarding Adult literacy Rate is available from the population Census.

e) Data Flow

This is depicted in the chart below:

CHART 4.9 – DATA FLOW



f) Publications

Education statistics is disseminated through the Annual Report of the Education Department, and also published in Statistical Abstract.

g) Time Lag

The time lags are as follows:

1. Institutional Data: 12 months
2. Enrolment Data: 12 months

h) Manpower engaged

The following staff of the respective Directorates are deployed for collection and compilation of educational statistics:

Table 4.8: Staff Deployed for Educational Statistics⁵

Designation	Staff No.
Directorate of Continuing Education	1
Department of Secondary Education	16
Department of Primary Education	45
Total	62

i) Use of IT

Desktop computers are available for compilation and tabulation of educational statistics there are also, 7 PCs are available with the cell and data compilation and tabulation on these computers. As no training on use of computers has been provided to the staff, data compilation, tabulation, and dissemination is adversely impacted upon.

j) Inter relationship with other Agencies and Data Flow.

The Directorates of Education interact with schools and the academic institutions to collect data, and with the Ministry of Education and University Grants Commission for supplying information to them and for other matters pertaining to Education.

k) Quality

The quality of other data, like enrolment suffers on account of: (i) absence of a suitable data checking and validation mechanism; (ii) manual compilation of data at Block and District levels; (iii) institutional records (such as admission registers, attendance registers and stock registers) are not properly maintained at the institutions, as a result of which correct information based on records cannot always be given; (iv) the tendency to give distorted information when it suits the school heads and the administrators; and (v) exclusion of private unaided institutions.

4.1.13 Labour and employment statistics

a) Agency

The Department of Labour is responsible for all data relating to Labour and Employment. The specific Directorate/Office of this Department that have responsibility for collecting and compiling labour and employment statistics are as given below:

⁵ Refer Chapter 7 for details

Labour Statistics: The office of the State Labour Commissioner is responsible for labour statistics derived from data collection related to Labour Acts including Payment of Bonus Act, and Child Labour (Prevention and Regulation) Act, among others.

Employment Statistics: The Directorate of Employment and Training is responsible for employment statistics classified by industry, occupation and sex with respect to the organised sector. These statistics are generated by the Directorate's Employment Market Information (EMI) programme. The responsibility for employment data with respect to registered factories is vested with the Office of the Industrial Safety and Health⁶ functioning under the State Labour Commissioner. This Office collects and compiles data received through statistical returns prescribed under various Acts like the Factories Act 1948, and Payment of Wages Act, among others.

Also, state level employment statistics related to general labour force participation including employment of women in the non-agricultural sector are available from the sample surveys conducted by NSSO (Central sample) and DES (State sample).

Work force in various industries classified, inter alia, by sex is also available from Populations Census for the smallest administrative unit (village/town).

b) Outputs and Frequency of Data Collection

The statistical outputs generated and their frequencies are given in Table 4.9 below:

Table 4.9: Statistical Outputs-Labour and Employment

SN	Statistical Output	Agency Responsible	Frequency
1	Labour Statistics		
1.1	Labour force by industries, age, sex and education	Population Census	Decennial
		DES (through NSS State sample)	Annual
1.2	Data on wages – structure and distribution, minimum wages, labour cost etc.	Office of the Labour Commissioner	Quarterly and Annual
1.3	Industrial disputes and man days lost by strike, lock outs etc by region and industry	Office of the Labour Commissioner	Quarterly and Annual
1.4	Social security – ESI, PF, Bonus, Gratuity etc – including Prosecutions by Law Courts, and Cases pending decision	Office of the Labour Commissioner	Quarterly and Annual
1.5	Bonded labour	Office of the Labour Commissioner	Quarterly and Annual
1.6	Emigration of workers	Office of the Labour Commissioner	Annual
1.7	Report on working of various Labour Acts	Office of the Labour Commissioner	Annual
1.8	Number of Registered Trade Unions	Office of the Labour Commissioner	Annual

⁶ This office was earlier designated as the Office of Chief Inspector of Factories.

SN	Statistical Output	Agency Responsible	Frequency
1.9	Membership of Trade Unions by sex	Office of the Labour Commissioner	Annual
1.10	Income of Trade Unions	Office of the Labour Commissioner	Annual
1.11	Factory Accidents	Office of the Labour Commissioner	Annual
1.12	Industrial Complaints – received and processed	Office of the Labour Commissioner	Annual
2	Employment Statistics		
2.1	Employment in factories by industry and sex	Directorate of Industrial Safety and Health	Annual
2.2	Employment in organised sector by industry and sex	Directorate of Employment & Training - EMI	Biannual: Alternating between public and private sector
2.3	Number of job seekers on live registers of employment exchanges by qualification and other categories like ST, SC, OBC etc	Directorate of Employment & Training	Quarterly, and Annual
2.4	Number of candidates sponsored	Directorate of Employment & Training	Quarterly, and Annual
2.5	Number of placements made	Directorate of Employment & Training	Quarterly and Annual
2.6	Number of Employment Exchanges	Directorate of Employment & Training	Annual
2.7	Number of applicants and placement in employment by level of Education	Directorate of Employment & Training	Quarterly and Annual
2.8	Employment in Khadi and Village Industries.	Directorate of Employment & Training	Annual
2.9	Employment in Mines.	Directorate of Employment & Training	Annual
2.10	Employment in Public Sector – Industries and Services.	Directorate of Employment & Training	Annual
2.11	District wise Employment in Public Sector.	Directorate of Employment & Training	Annual
2.12	Number of Government Employees – Pay range wise	Directorate of Employment & Training	Annual

c) Time Lag

Labour Statistics: There is a time lag of 48 months.

Employment Statistics: There is a time lag of 24 months.

d) Methodology.

Data on Labour and Employment comes from different sources. The sources are census data, NSS data, Directorate of Employment & Training, Directorate of Industrial Safety & Health, and the Labour Commissioner. The details are discussed below.

Labour Statistics:

- (i) **Wages:** Data on wages and distribution of minimum wages is statutorily collected under “The Minimum Wage Act 1948”, and the “Payment of Wages Act 1936”. Under this the primary units employing labour is required to submit annual statutory returns to the Regional Jt. Commissioner (Labour), who after scrutiny, compiles it for the region and forwards this annual reports to the Labour Commissioners of the state. At state level, annual data is compiled.
- (ii) **Disputes:** Information about Industrial Disputes is required to be submitted by the primary unit under Trade Union Act 1926 and Industrial Dispute Act 1947. This information is submitted only when any Industrial Dispute arises. Information about nature of disputes, mandays losts are required to be statutorily submitted. While the dispute persists, information is sent more frequently, otherwise only “Annual Returns” are submitted. Region wise and Industry wise data is compiled annually.
- (iii) **Social Security:** Information about funds provided under various social security measures, separately as employees and employers contribution under ESI, PF, Gratuity etc is prepared on monthly basis, by the primary, unit and submitted to the Regional office of the Labour Commissioner, every month. From Regional offices, the data flows to the state office where it is compiled on monthly and Annual basis. Apart from finances, the number of workers covered under several measures viz, ESI, PF, Bonus, gratuity etc are also reported and compiled.
- (iv) **Bonded Labour:** As and when any Bonded Labour is identified, it is reported oftehrwise a nil report is forwarded every month. Primary unit for this is a Labour Inspector, from where the report is transmitted to the Labour Officer, and to Regional office and to State Labour Commissioner.
- (v) **Emigration of Workers:** This report is generated only when large scale emigration due to drought’s or natural calamity takes place, other wise no regular reports on emigration is brought out. Reports about seasonal migration from Rural to Urban and Vice-versa, at times of lean agricultural seasons, are not prepared.
- (vi) **Population Census:** – While collecting data in population census, the details about persons (males/ females) engaged in gainful occupation during certain specified period preceeding the date of survey is also gathered from the HH. Information of persons gainfully occupied is tabulated, which gives the number of workers in different occupations sex wise and area wise.

Employment Statistics

- (vii) **Returns under the Factories Act:** through regular statutory returns furnished by the registered factories to the District offices of Industrial Safety and Health
- (viii) **NSS:** – while conducting the NSS, information is collected from selected households on individuals, gainfully occupied in different occupations. Those who are not gainfully employed are regarded as “Non-workers”. The information is tabulated, occupation wise, sex wise and rural urban Wise, which when analysed, provides estimates of employment for the state

- (ix) **EMI:** employment data is collected through statutory quarterly returns (statutory for all public sector employers and employers in private sector engaging 25 or more and voluntary for private sector employers engaging 10 to 24) to be furnished to the local Employment and Self-employment Guidance Centre

e) Statistical returns

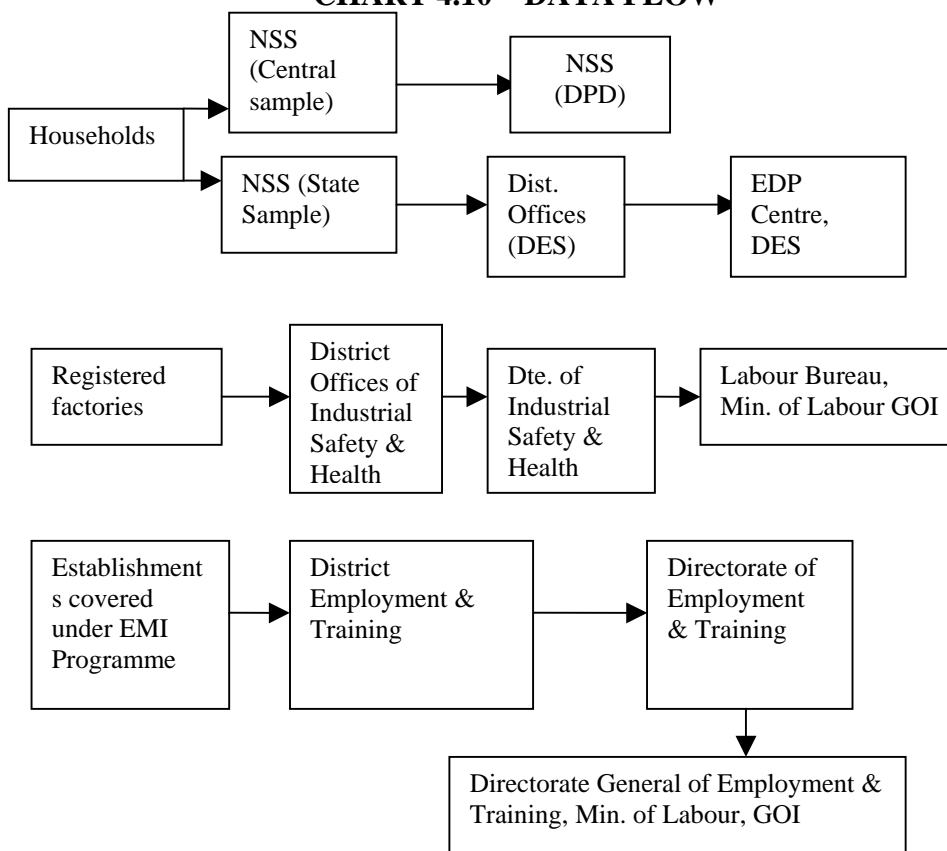
Labour Statistics: Statutory statistical returns are used.

Employment Statistics: Statutory statistical returns are used.

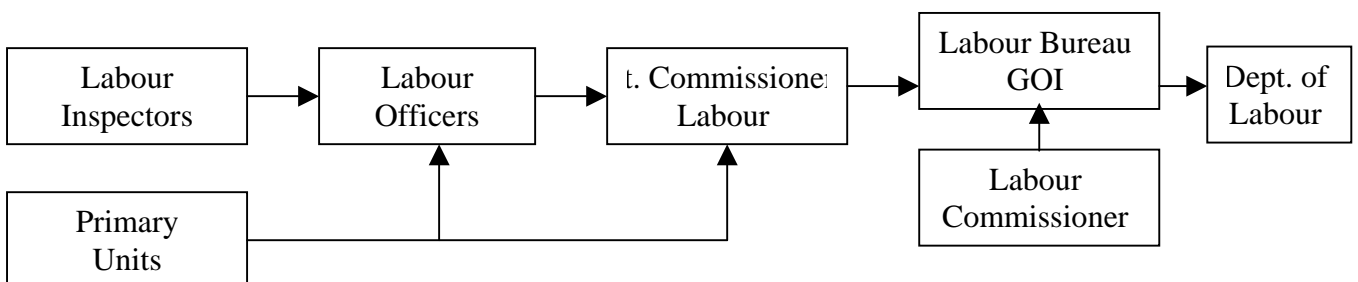
f) Data Flow :

Employment Statistics: This is depicted in the charts below:

CHART 4.10 – DATA FLOW



Labour Statistics



g) Publications.

The data are published in the Annual Report of the Labour Department, and DES' Statistical Abstracts.

h) Interrelationship with Agencies

For purposes of data collection, compilation, and dissemination frequent interactions and consultations take place between DES, NSS (FOD), and NSS (DPD); the Office of Industrial Safety and Health and factories in the organised sector; the Office of Industrial Safety and Health and the Labour Bureau, Ministry of Labour (GOI) to whom the reports are sent; the Directorate of Employment and Training and District Employment Exchanges; and the Directorate of Employment and Training and the Directorate General of Employment and Training in the Ministry of Labour (GOI) every quarter.

i) Manpower engaged

The statistical cell in the Department of Labour has a staff of five. For details refer table 7.4 in chapter 7.

j) Quality

The data quality suffers in terms of adequacy, reliability and accuracy. This is due to (i) errors in the list frame of factories used by the Directorate of Industrial Safety and Health which includes a number of closed factories that cannot be deleted till they get de-registered, and exclusion of new factories as the list frame is not regularly updated; (ii) lack of completeness of the list frame of establishments with respect to collection of employment data from the organised sector- non inclusion of new factories (iii) non-response from establishments compulsorily required to render the employment returns; (iv) exclusion of private sector establishments employing 10 to 20 employees; and (v) delays in processing data on employment in the organised sector collected and compiled by the Directorate of Employment and Training.

4.1.14 Housing Statistics

a) Agency

The responsible agency is the Rajasthan Housing Board.

b) Outputs

The principal outputs are:

- EWS Housing – Number Houses constructed, and allotted.
- LIG Housing – Number of Houses constructed, and allotted.
- MIG Housing – Number Houses constructed and allotted.
- HIG Housing – Number Houses constructed and allotted.
- Land allotment by the Development Authorities.

c) Frequency

The frequency of data collection is monthly.

d) Methodology

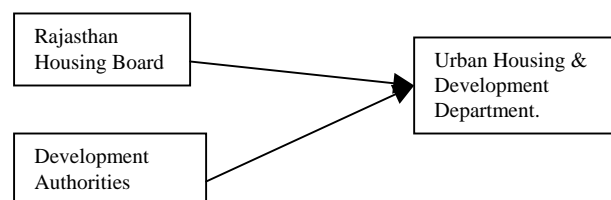
Housing Statistics is collected by the Rajasthan Housing Board in respect of the dwellings constructed by the Board in the Towns and Cities for various categories, such as Lower Income Groups, Middle Income Groups and the Higher Income Groups, NRIs, etc. Besides these, the various Development Authorities in respect of land allotment maintain data for Housing, regularization of Agricultural Land used for residential purposes, and land allotted to colonizers for constructing Housing Complexes.

The housing statistics is collected by the Housing Board from 32 administrative divisions and circles on monthly basis and sent to the Urban Housing and Development Department. Also, the Development Authorities provide data on permissions granted for housing construction on an annual basis to the Urban Housing and Development Department. The two data streams are used by the Department to compile comprehensive data on housing including new construction. This compilation is done at the State level.

e) Data Flow

The data flow is as shown below.

Chart 4.11



f) Time Lag

The time lag in data dissemination is six months

g) Publications

Housing Statistics is disseminated through the Board's Annual Progress Report, which is published regularly and sent to the State Assembly, AG office and other line departments.

h) Inter relationship with other Agencies

The Department of Urban Housing and Development interacts with the Housing Board and the Development Authorities in the Districts to collect the data and the progress on various assurances given in the Vidhan Sabha by the Government.

i) Staff Deployed

The following staff is deployed by the Urban Housing and Development Department for compilation and tabulation of housing statistics:

- One Statistical Officer
- One Statistical Inspector

j) IT Tools Used.

Neither the Urban and Housing Development Department nor the Rajasthan Housing Board have any IT equipment. No hardware and software facilities are available with the statistical cell and no training is given from last 5 years to the existing staff working in the department. All data is compiled and tabulated manually.

k) Quality

The quality of data is low as rural areas are not covered. The quality of data collected by urban local bodies on housing statistics of urban areas is good as this is based on the administrative records.

4.1.15 Birth and death registration statistics

The responsible agency for birth and death registration statistics is DES. Statistics related to births and deaths are collected and compiled through (i) Civil Registration System; (ii) Sample Registration Scheme; and (iii) Medical Certification of Causes of Death Scheme.

Under the Registration of Births and Deaths Act 1969, the registration hierarchy has been declared as follows:

Table 4.10: Births and Deaths Registration Hierarchy

Level	Officer	Registration Hierarchy
State	Director Economics & Statistics	Chief Registrar of Births & Deaths
District	District Statistical Officer of all District	District Registrar
Block	Block Development Officer	Additional District Registrar (concerned Block)
Urban Areas	Executive Health Officer/ Health Officer/Chief Officer of Municipal Corporations/Councils	Registrar (concerned Municipal Corporation/ Municipal Council)
Cantonment	Cantonment Executive Officer	Registrar (concerned Cantonment Board)
Village	Gram Sevak	Registrar (concerned Village)
Specified Area	Administrator	Registrar (concerned specified area)

Jamadars, midwives, ANM, Family Planning Workers and Health Guides are appointed as Informants.

a) Agency

The responsible agencies for administering the above schemes for data collection and compilation are:

Civil Registration System (CRS): Director of Economics & Statistics, Rajasthan has been made responsible for implementation of Civil Registration system in the state.

Sample Registration Scheme (SRS): Directorate of Census Operations, Rajasthan, Government of India, has overall responsibility. SRS is implemented in a sample of villages and selected urban blocks in Rajasthan. The procedure adopted for implementation of the scheme is uniform over the country. The scheme is operated by GOI directly. The objective of the scheme is to have representative estimates of annual vital rates for the State.

Medical Certification of Causes of Death Scheme (MCCD): DES and the Directorate of Public Health and Family Welfare have responsibility for collection and compilation of MCCD statistics, which is a component of CRS. The DES' responsibility includes collection of certificates of causes of death along with a statement each month from all nursing homes, private hospitals, and government hospitals. The responsibility of the Directorate of Public Health and Family Welfare is limited to collection of monthly statements only from the government hospitals.

b) Principal Outputs

The principal outputs are:

- Data on registered births and deaths and estimated vital rates
- Data on deaths classified by age, cause of death
- Infant mortality data
- Data on age and education of mother, order of birth, spacing, age at marriage, etc.

c) Frequency

Civil registration system: The frequency of data collection is monthly, and that for release of data is monthly and annual

Sample Registration Scheme: The data collection frequency is multiple – monthly, half-yearly, and annual. The release frequency is annual

Medical Certification of Cause of Death (MCCD): The collection frequency is monthly, and release frequency is annual.

d) Methodology

Civil Registration System: The vital events are registered by the Sub-registrars or the Registrars within a prescribed period of its occurrence.

For **rural areas**, village registers are maintained at Block level and updated every month after receiving the reports from the village level registrars. In rural areas, the

Sub-registrar submits a summary of number of registered events – births, deaths, infant deaths, and still births – to the Additional District Registrar of the respective Block. At the Block level, the number of events registered is scrutinized and compiled for the Block. A simple monthly abstract is sent to the District Registrar by 10th of the following month. The rural registration activities are reviewed, supervised and inspected by the BDO and the District Registrars, and occasionally by the Chief and Deputy Chief Registrars.

In case of **urban areas**, the local Registrars of Municipal Corporations, Municipal Councils and Nagar Palika record vital events which are maintained in registers in their respective offices. These Registrars compile monthly abstract of number of events registered in their respective jurisdictions and send it to the District Registrar. The urban registration activities are reviewed, supervised and inspected by the District Registrars, and occasionally by the Chief and Deputy Chief Registrars

The reports of vital events received from **rural and urban areas** by the District Registrar are scrutinised and compiled for the District and sent to the Chief Registrar of Births and Deaths in the State (DES) so as to reach him by the 15th of the following month. The District reports are further scrutinised and compiled for the State for transmission to the Registrar General of India so as to reach by the end of the following month.

Being a legal record, the village registrars maintain and keep birth, death and still birth registers for a period specified in the MP Registration Rules, 1999. After that, the records are transferred to Additional District Registrar for preserving as a permanent record. In the urban areas, the registrar maintains and preserves the records at his own level.

.ii) Sample Registration Scheme

For the purpose of this Scheme, a sample of villages and urban Blocks are randomly selected by the Registrar General of India. The sample of villages and Blocks selected once in ten years after each census is kept unchanged for the next ten years. In each selected village/ block, a local teacher/ government official (whosoever becomes available) is appointed for registration of vital events in the specified area. He is paid a monthly honoraria for this task.

The first step is to prepare a complete list of households with names of every permanent member of the household, and their age, and sex. The names of pregnant women are also recorded. Guests, if any, during the listing operations are listed separately.

Regular registration of vital events begins from a scheduled date. The onus for reporting vital events to the local Registrar rests with the household. Monthly summary of vital events is prepared by the local Registrar and sent to the Director of Census Operation, where these are scrutinised and compiled for the State and sent to the Registrar General of India.

After every six months, the local Registrar conducts a survey of all households in the village/ Block, along with the list of households prepared initially. During these half

yearly surveys, a through checking is done of the occurrence and recording of vital events. On the basis of the results of half-yearly surveys both the list frame of households and the record of births and deaths are updated.

Records of all births and deaths in sample villages and Blocks based on registration and half-yearly updating are sent to the Registrar General of India, where these statistics are compiled for the State to provide estimates of birth and death rates, and infant mortality rate.

Medical Certification of Cause of Death (MCCD): Under this scheme, medical certificates of death, incorporating the cause of death (MCCD) as per ICD-10 classification of WHO are collected from public and private hospitals by the Chief Registrar through statutory returns prescribed under Registration of Births and Deaths Act 1969. MCCDs are collected from civil and district hospitals, and community health centers. In addition private hospitals are also required to send MCCD to the Chief Registrar. The certificates are collected centrally at the Chief Registrar’s office in Bhopal in respect of all urban units and rural hospitals in the State, scrutinised and compiled for the State and sent to the Registrar General

e) Data Flow

This is depicted in the charts below:

Chart 4.12 – Data Flow: Reporting System of Registered Births and Deaths

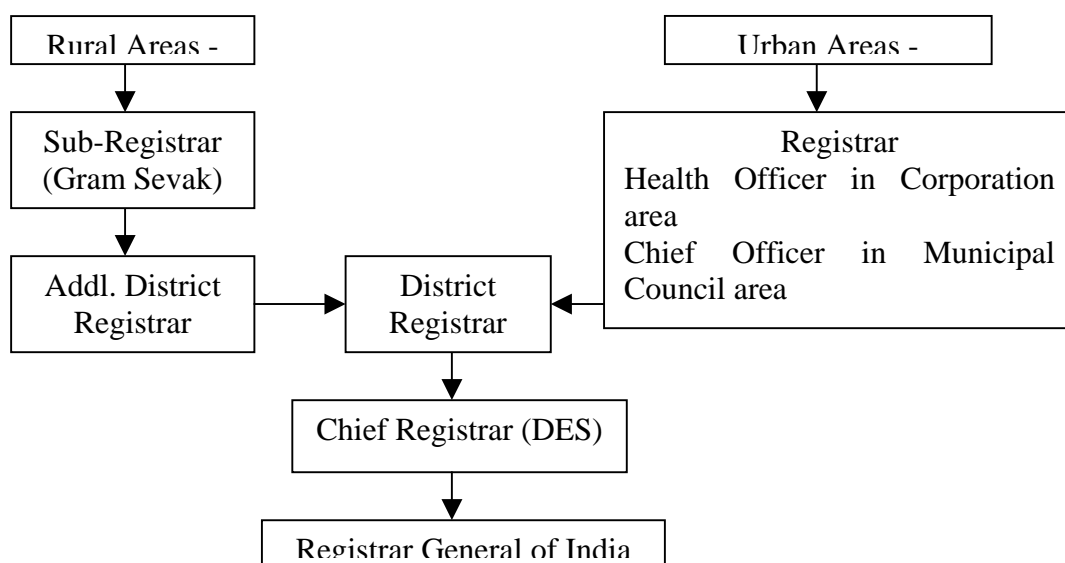
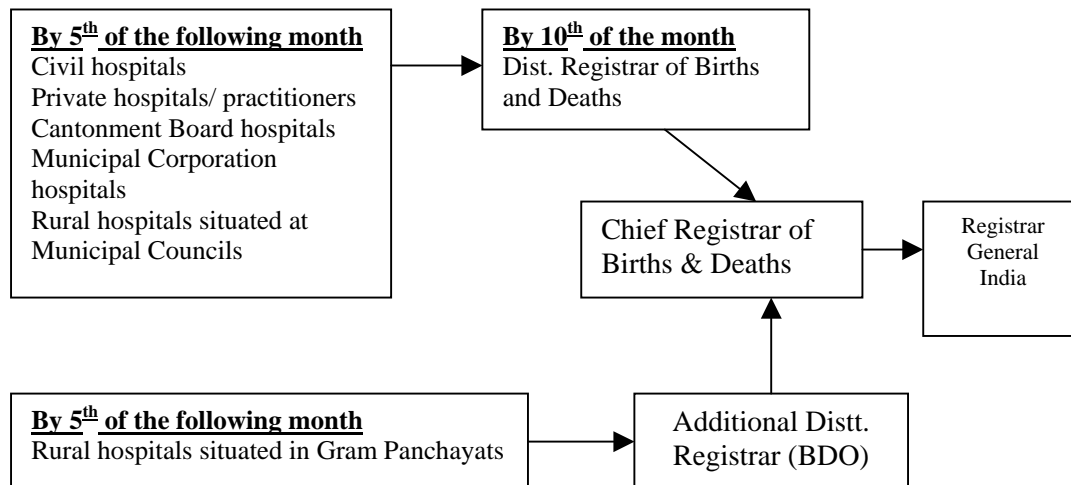


Chart 4.13 – Flow of Data under the MCCD Scheme



f) Statistical Returns

The following statistical returns are used by the *Sample Registration Scheme*:

1. Form 1: House list
2. Form 2: Household details
3. Form 3: List of pregnant women
4. Form 4: Half-yearly reports on births from enumerators
5. Form 5: Half-yearly reports on deaths from enumerators
6. Form 6: Monthly report on births from enumerators
7. Form 7: Monthly report on deaths from enumerators
8. Form 9: Half-yearly reports of Supervisors on births
9. Form 10: Half-yearly reports of Supervisors on deaths
10. Form 10b: Verbal Autopsy Reports
11. Form 15: Distribution of usual resident population by age, sex and marital status
12. Form 16: Distribution of men and women by age and marital status
13. Form 17: Distribution of females by age and educational level

The statistical returns used for *Civil Registration System & Medical Certification of Cause of Death Scheme* are:

1. Form 1: Birth Report (Statutory) – contains two parts, legal part and statistical part.
2. Form 2: Death Report (Statutory) – contains two parts, legal part and statistical part.
3. Form 3: Still Births (Statutory) – contains two parts, legal and statistical part
4. Form 4: MCCD report from hospitals (Statutory)
5. Form 4A: MCCD report from private practitioners (Statutory)

g) Publications

The publications reporting on the results of Civil Registration System & Medical Certification of Cause of Death Scheme are given in Table 4.11 below.

Table 4.11: Publications Related to Births and Deaths

SN	Publication	Periodicity	Latest Issue
1	Annual report on the Registration of Births and Deaths ⁷ Act	Annual	2001
2	Annual Vital statistics Report	Annual	2004

In addition, the processed vital rates received from the Registrar General of India under the Sample Registration Scheme are published in the regular statistical compilations of DES

h) Manpower used

The following staff are engaged:

Table 4.12: Manpower Engaged

Designation	Staff No.
Deputy Director	1
Assistant Director	1
Statistical Officer	1
Statistical Assistant	10
Statistical Inspector	1
Computer	2
Total	16

i) Use of IT tools

The IT tools available for Civil Registration System and Medical Certification of Cause of Death (MCCD) are:

- Three Desktop computers
- One Printer

As concerns Sample Registration Scheme, all the data is manually compiled, and data transmitted through mail.

Data transmission from the field to District to headquarters continues to be through mail.

j) Interaction with other agencies

Civil Registration System: The DES Bhopal is in regular interaction with the Registrar General of India and also with District Registrars. The District Registrars in turn interact closely with the Registrars and Sub-Registrars.

Sample Registration Scheme: The local Registrars in sample villages and urban Blocks interact with the Director Census Operations on a monthly basis.

⁷ Checking of data is in progress for 2002

Medical Certification of Cause of Death (MCCD): The registration units in medical institutions and health care centers interact with DES and the Department of Public Health and Family Welfare

k) Time Lag:

Civil Registration System: The time lag in release of data is 72 months

Sample Registration Scheme: The time lag in release of data is 24 months

Medical Certification of Cause of Death (MCCD): The time lag in release of data is 72 months

l) Quality

The quality of data on births and deaths suffers due to incomplete coverage by the Civil Registration System. The coverage under registration of births is below 40% and under deaths it is 40-60%⁸. Thus, the Registration of vital events is still not complete. The recording efficiency, in terms of registrations as a percentage of SRS estimates, is low. The situation is better in urban areas as compared to rural areas. This is a result of several factors including a general lack of awareness in the public about the statutory requirements and procedures of registration lack of adequate numbers of birth and death certificates in rural areas, and high percentage of domiciliary deaths and births with the household becoming responsible for statutory reporting of events. To improve awareness about births and deaths registration, the District Statistical Offices, who are also the District Registrars, are taking at least one camp in urban areas to distribute Births & Death certificates to the households, who have got the event registered.

Further, while reliable estimates of birth and death rates, and infant mortality rates at the state level are obtained from the Sample Registration Scheme, district-wise vital rates are not available.

Another factor impacting adversely on quality of data on vital events is considerable delay in reporting of statistics from the local registrars that eventually delays the compilation of vital statistics at the State level. This delay is due to inordinately long time taken for intermediate tabulation at the district and town/municipality levels because of inadequate staff and manual compilation and tabulation of data.

As concerns Medical Certification of Cause of Death (MCCD), the reports are not received regularly and from all indented hospitals. While some estimates of IMR are available from SRS, the only available estimate of MMR is from the 1998 Health and Family Welfare surveys. In the absence of completely reliable data on certified cause of deaths, estimation of maternal mortality rate is very difficult. The incidence of maternal mortality being low, deriving reliable sample estimates requires a very large sample size.

⁸ Source: Report of the National Statistics Commission

4.1.16 Electricity production and Distribution

a) Agency

The electricity production and distribution is done through the following five Companies:

1. Rajasthan Rajya Vidyut Utpadan Nigam Ltd., Jaipur – for generation of electricity.
2. Rajasthan Rajya Vidyut Prasaran Nigam Ltd., Jaipur – for bulk transmission of electricity.
3. Rajasthan Rajya Vidyut Vitran Nigam Ltd., Jaipur- for distribution of electricity.
4. Rajasthan Rajaya Vidyut Vitran Nigam Ltd. Ajmer - for distribution of electricity
5. Rajasthan Rajya Vidyut Vitran Nigam Ltd. Jodhpur- for distribution of electricity

Rajasthan Rajya Vidhut Prasaran Nigam is publishing annual progress report regularly.

b) Outputs Generated

The principal outputs generated are:

- Length of Distribution Lines.
- Installed Capacity (Own+partnership projects+allocation from Center).
- Power Consumption by Categories:
 - Domestic;
 - Commercial;
 - Industrial;
 - Public Lighting;
 - Agriculture;
 - Public Water works;
 - Others.
- Number of consumers served by Categories.
- Villages Electrified.
- Number of wells energised.

c) Frequency

Data on power generation is available on a daily basis from the concerned companies. Electricity distribution statistics are available on a monthly basis from the power distribution companies.

d) Methodology.

Power Generation: Data on generation of electricity originates from individual power stations, who provide data on generated power to the Rajasthan Rajya Vidyut Utpadan Nigam Ltd., Jaipur. This is done on-line on a daily basis. The power generation statistics are compiled on a monthly basis and provided to the Department of Power. In case of emergencies the data on generation is provided to the Department of Power on a daily basis. The Company also compiles data on power generation on an annual

basis, which is transmitted to the Power Department and published in the Company's Annual Report.

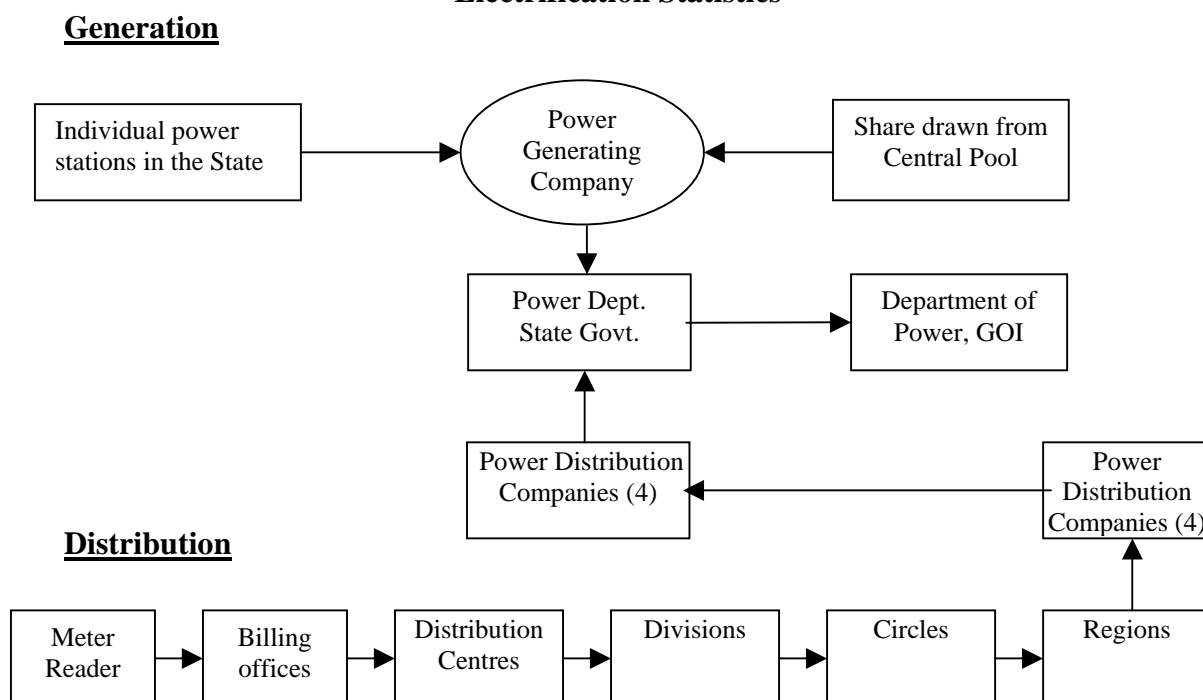
Power Distribution: Power distribution is managed by four companies with distinct regional responsibilities - Rajasthan Rajya Vidyut Prasaran Nigam Ltd., Jaipur (for bulk distribution of electricity); Rajasthan Rajya Vidyut Vitran Nigam Ltd., Jaipur; Rajasthan Rajya Vidyut Vitran Nigam Ltd. Ajmer; and Rajasthan Rajya Vidyut Vitran Nigam Ltd. Jodhpur. To have an efficient distribution system, the State has been divided into Regions, circles, Divisions and Distribution centres. Each distribution centre has a number of billing offices, where the meter readers report consumption of electricity by an individual consumer. This reporting is done on a bimonthly basis. Though billing to consumer is done once in two months, about half of them are covered in a month, and another half in next month. Hence power consumption statistics is generated every month.

The billing offices compile statistics on consumption of electricity and transmit it to their respective distribution centres from where it is sent to the Distribution Company through respective Divisions, Circles, and Regions after compilation and consolidation at the respective levels. The four Distribution Companies compile the power consumption data at their respective jurisdiction level and transmit this to the Power Department where the data is compiled at the State level.

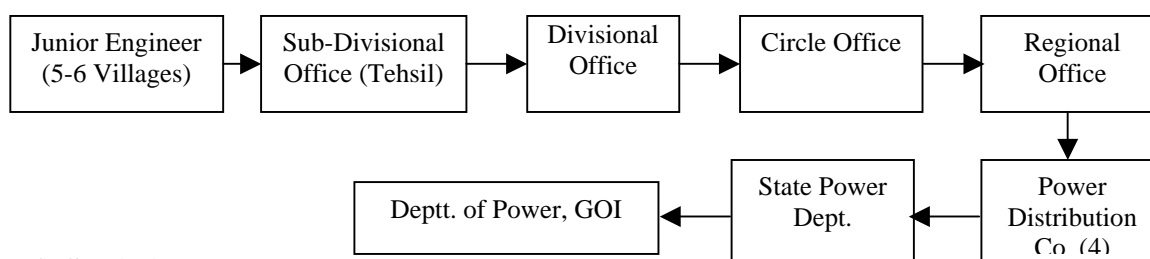
e) Data Flow

This is depicted in the chart below:

Chart 4.14: Data Flow – Power Generation and Distribution, and Rural Electrification Statistics



Rural Electrification



f) Statistical returns

Power generation data is on-line. Data on power consumption is reported in a non-statutory form prescribed by the Company in which category wise consumption of power is compiled. Reporting of the progress of rural electrification is done through a monthly progress report (non-statutory).

g Publications

There is no statistical publication on power generation and distribution. However, such data is published in the Annual Reports of the Department of Power, and the various Companies listed above.

h) Time Lag

The time lag in data dissemination is 12 months

i) Staff

All the above companies have their separate set up of statistical sections

j) Use of IT

Transmission of data on power generation from power stations to Rajasthan grid is on line. Billing data is being computerised.

k) Quality

The data on electricity generation and consumption is accurate and reliable.

4.1.17 Environmental Statistics (including Water Supply and Sanitation and Forestry statistics)

4.1.17.1 Forestry Statistics

a) Agency

The Forest Department⁹ is responsible for collecting and releasing data on Forests.

⁹ The Forest Department is headed by Principal Chief Conservator of Forests. He is assisted by Additional Chief Conservators, Chief Coservatoras, Conservators Deputy Chief Conservators, Assistant Conservators, Dy. Chief Wild Life Protection Officers, Senior Research Officer of the Forest Services. Personnel from Accounts Services, Engineering Services, Soil Conservation Officer, State Administrative Service, Judicial Service, Veterinary Service, Horticulturist and Statistical Service support them. In the subordinate service there are Rangers, Forest Officers, Assistant Forest Officers, Wardens, Game Watchers, Track Guards, Trekkers etc.

b) Outputs Generated

The principal outputs generated are:

1. Classification of forest area by management and legal status
2. Area under silviculture
3. Area under plantation, species-wise
4. Estimated employment
5. Daily wage rates
6. Length of forest roads
7. Details of revenue and expenditure
8. Production of major and minor forest produce
9. Information on sawn and round timber
10. Quantity of grass cut
11. Sales of minor forest produce
12. Wholesale prices of charcoal and firewood prevailing at various market centers for the quarter ending June and December
13. Wholesale prices of minor forest produce prevailing in Market Centres during the year
14. Herbs Produce.

c) Methodology.

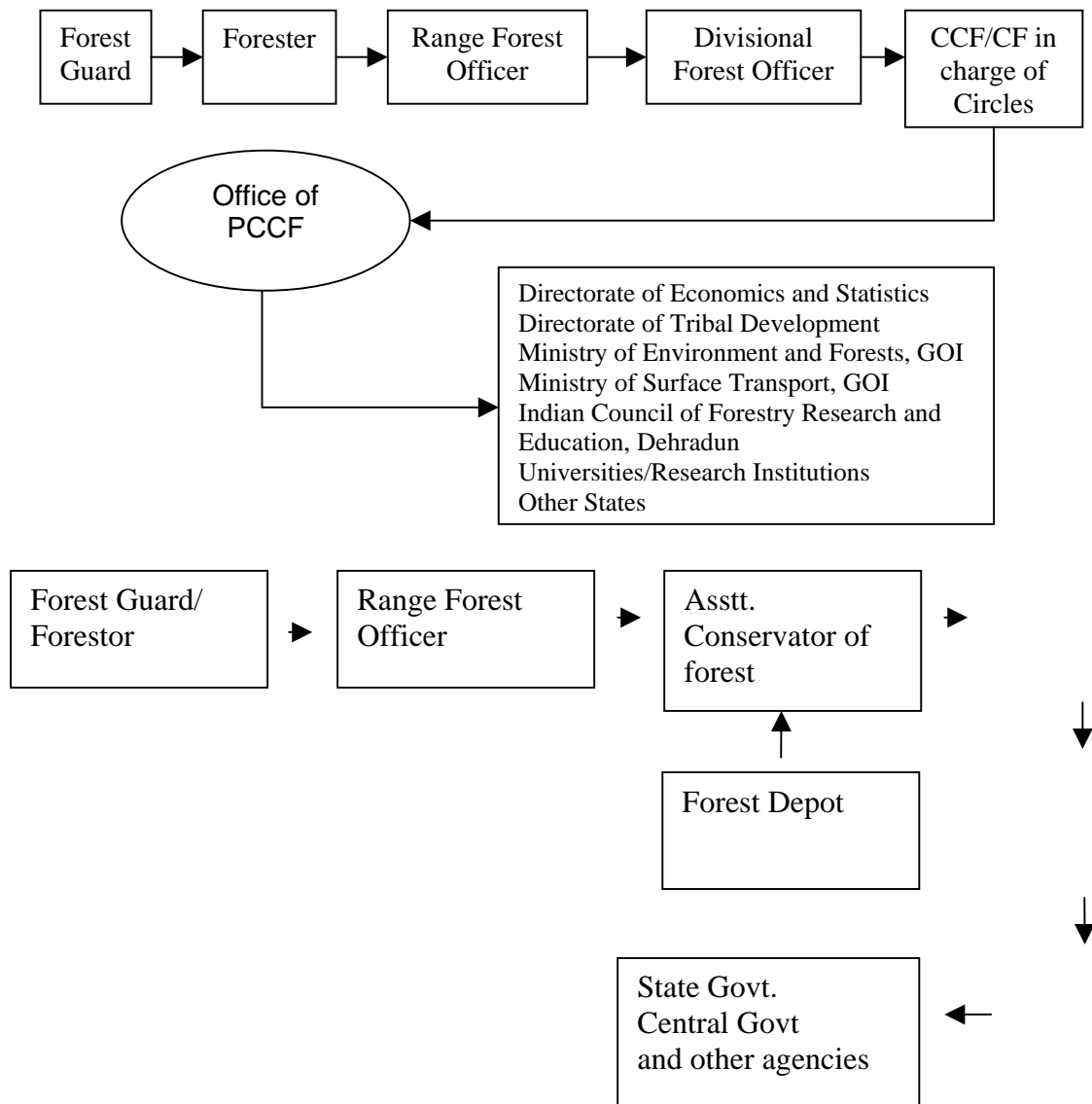
Forest Guards and Forester are amongst the lowest functionaries involved in collection and compilation of forest statistics. Forest statistics are collected from the field by Forest Guards and sent to the Range Forest Officer, where range level data are compiled and sent to the sub-division headed by an Assistant Conservator of Forests (ACF). Statistics at the sub-division level are compiled by the ACF and transmitted to the Division headed by a Deputy Conservator of Forests (DCF). After compilation of data at the Division level, the same is sent to the Circle headed by a Conservator of Forest (CF). The data is scrutinised and compiled for the Circle by the Office of the CF and sent to the Principal Chief Conservator of Forests (PCCF), where compilation of state level statistics is done.

As concerns statistics related to sales and revenues from Forest Depots, the Depots are required to submit monthly report to the Deputy Conservator of Forest on stocks at the beginning of the month, arrivals of forestry produce in the Depot during the month, and sales during the month. Details of stocks and arrivals are given in physical terms, while that of sales are provided both in physical and financial terms. This information is compiled for the District, and Depot-wise wise as well as District-wise reports are sent to the concerned Conservator of Forests in the respective regions where regional level compilation is done and sent to the Principal Chief Conservator of Forests for state level compilation.

d) Data Flow

This is depicted in the chart below:

Chart 4.15 Data Flow – Forest Statistics



e) Statistical Returns

The data are collected through a number of annual non-statutory returns. Some of the important returns are:

- Forest area of Reserved, Protected and Unclassified Forest under the charge of Forests Department
- Forest area of Reserved, Protected and Unclassified Forest under the charge of Revenue Department
- Outturn of Timber and Firewood (Cu.m. soild)
- Outturn of Minor Forest Produce
- Account of Timber and Other Forest Produce cut or collected by Govt. Agency and brought to depot and sold locally or otherwise
- Summary of Revenue and Expenditure

- Depot Sale Result
- Details of size classification of material disposed
- Information on Depot Sale result of firewood and Charcoal for the Year
- Information on prices realized at department/FLCS sale of minor
- Forest produce information regarding wholesale prices of timber
- Information regarding sawn timber
- Information regarding round timber
- Information regarding wholesale prices of firewood and charcoal prevailing at various market centres for the quarter ending June/December (Half-yearly)
- Information regarding wholesale prices of minor forest produce
- Prevailing at various market centers during the year
- Information about plantation activities in the area

f) Publications

Forest statistics are disseminated through following publications:

- Rajasthan Forest Statistics 2003 (every three years) – Forest Department
- Administrative Report 2005-06 (Annual) – Forest Department
- Forest News - published monthly by the Forest Department

g) Time Lag

The time lag in data dissemination is 18 months

h) Manpower

There is one statistical officer posted for this activity

i) IT Tools Used.

The Department is computerized fully with facilities for video conferencing and networking with the Conservator of Forests in the ranges. But no IT tool is used for statistical work, and compilation and tabulation of data is mostly done manually.

j) Quality

The quality of forestry statistics suffers because of inadequate supervision of data collection operations at the Beat level, and manual data compilation and tabulation. Moreover, the full scrutiny and validation of the data at the Range and Circle levels is inadequate, which further accentuates the accuracy and reliability issues. There is also inadequate coverage as some relevant social forestry linked parameters like head loads of fire wood, wood used as cooking fuel, among others are excluded. However, the data related to the economic activities of the Department, for example, sale of minor produce, and timber are of adequate quality.

4.1.17.2 Water supply and sanitation statistics

a) Agency

The Public Health & Engineering Department is responsible for collection, compilation and dissemination of data on drinking water and sanitation in rural areas. The responsibility for data collection on sewerage and solid waste management, and Common Medical Waste treatment in bigger towns and cities is vested with the Director Local Bodies.

b) Principal Outputs

The principal outputs generated are:

1. Number of villages covered by water supply fully/partly/not covered
2. Number villages by source of water supply – hand pumps, traditional sources
3. Number of Rural schools covered by water supply
4. Number of latrines constructed and expenditure thereon
5. Monthly physical and financial progress reports on water supply and sanitation under 20-Point Programme, *Swajaldhara* Scheme, reports under Accelerated Rural Water Supply Scheme and Minimum Needs Programme, Prime Minister's Scheme announced on 15 August 2002, School reports, and monthly reports on sanitation
6. Type of water supply in towns and cities:
 - a. Piped
 - b. By hand pumps and by powered pumps
 - c. Diggins and Tanks
7. Information about projects for treatment of water for salinity and fluoride.
8. Data on rural sewerage projects
9. Statistics pertaining to Solid waste management and Dumping Yards, and Common Medical Waste Treatment Facilities.

c) Methodology

In the case of **rural areas**, statistics on drinking water and sanitation are collected through monitoring of implementation of several schemes that are currently under way in the State, and ad hoc surveys conducted from time to time. Junior Engineers at the Sub-division level are in charge of project implementation and in the process of project implementation collect information on available assets in villages, and works under way. Supervision is done by the Assistant Engineer to whom all data/information collected by the Junior Engineer is submitted for compilation at the Sub-division level and onward transmission to the Executive Engineer at the District level. This is scrutinized and compiled for the District and sent to the Superintendent Engineer in the concerned Division (for Rural Areas) and Project Division, headed by s Superintending Engineer for Urabn areas. The statistics is compiled for the division and sent to the Chief Engineer of the concerned Region, where it is scrutinized and consolidated, and sent to PHED, where the data is compiled for the State.

Statistics on drinking water and sanitation are also generated through the monitoring of school-specific schemes by the Village Panchayats and maintained by them. The

data collected by the Panchayats is not shared with anyone in either PHED or other State government departments/agencies.

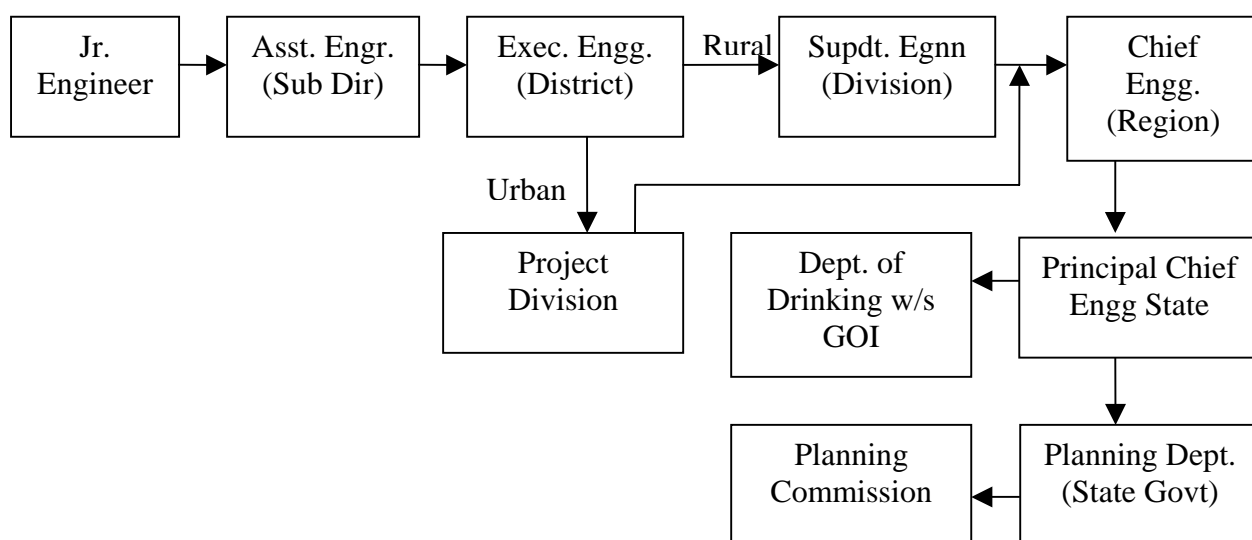
As concerns **urban areas**, the process of collection and compilation of statistics up to the District level is similar to that of rural areas as described above. The data compiled at the District level is sent to the Project Division headed by a Superintendent Engineer. This data is scrutinized and tabulated separately for Municipal Corporations and Municipal Councils, and the Nagar Janpaths and sent to the Chief Engineer of the concerned Region, where the data is checked and forwarded to PHED where it is further checked and compiled for the State.

The due date of receipt of the monthly reports by the State Headquarters is 5th of the following month. Usually, the reports are received in the Department by 10th and by 15th the reports are sent to the Planning Department and Central Government.

d) Data Flow :

Data flow with respect to Drinking Water Supplies and Sanitation is depicted as below:

Chart 4.16: Data Flow – Water and Sanitation Statistics



e) Publications

There are no separate publications on water supply and sanitation statistics. These statistics are, however, published in the Plan documents, Economic Survey of Rajasthan and various statistical compilations of DES. The Public Health Engineering Department however brings Annual Administration Report, which gives details about the departmental activities and also the statistical data

f) Manpower used

Four Statistical Assistants and four Computers from the common cadre are posted in the Department. Of the four Assistants one is posted in the Monitoring Cell of the Department.

g) Use of IT

No IT equipment is available for the statistical work. The monthly reports flow is through normal mailing system.

h) Timeliness

There is a time lag of one year in release of data on water and sanitation issues.

i) Publications

Data is disseminated through the Department's Annual Report. The PHED brings out Annual Administration Reports in which the data for Drinking water supplies are published.

j) Quality

The quality of data generated on drinking water and sanitation is inadequate in terms of adequacy, reliability and timeliness. This is due to limited scrutiny and supervision of village surveys through which data is collected; and delays in data availability caused by multiple layers through which the survey data is sent to the Department without significant value addition by the intervening functionaries – Assistant Engineer, divisional Executive Engineer and the Circle Superintending Engineer. The data is collected on an ad hoc basis and released with a time lag of 18 months.

4.1.18 Participation in National Sample Survey

a) Agency

DES participates in the NSSO's programme of surveys by canvassing NSSO's schedules for various Rounds over a matching State sample. The data so collected for the State sample are required to be processed at the DES and reports brought out. No attempts to pool the State sample results with those of the Central sample have been made.

b) Principal Data Generated.

Processed results in the form of reports for various Rounds. Each Round is for six months.

c) Frequency

Annual, as per NSSO's programme of subject coverage

d) Methodology

DES collects the basic data from the households in the State sample through its own field investigators. The questionnaires, concepts, etc. used are the same as those of NSSO used in the Central sample. The sample state size for rural and urban areas is same as that in the Central sample. Field inspectors who submit the filled in schedules

to the District Statistical Officers do survey rounds as per the directives of the NSSO collect data. They scrutinize the data and send to the Directorate where the data are compiled, coded and validated and tabulated. State Sample Data is tabulated at the DES. Pooling is in abeyance due to technical reasons.

The fieldwork in respect of 61st Round (July 2004 to June 2005, Schedule 1.0: Household Consumption Expenditure, and Schedule 10: Employment and Unemployment) has been completed. Data collection for the 62nd Round (July 2005 to June 2006, Schedule 2.2: Manufacturing Enterprises, Schedule 1.0: Household Consumption Expenditure and Schedule 10: Employment and Unemployment) has also been completed. Field work of 62nd round – second round is under progress.

Reports up to the 57th Round have been prepared. Data entry and validation of the 58th Round has been completed, data entry and validation of 59th Round is in progress.

The department has not started electronic processing of data. As a result, a few isolated reports were brought out by manual tabulation of a part of data in different rounds. Otherwise on completion of field survey, the schedules are checked and kept in lots, awaiting its tabulation for a period unknown. In absence of tabulation, reports based on state sample itself, not to speak of pooling, are not coming for different rounds.

The schedules on subjects taken up in various rounds (not covered in Table above) are lying in a heap, without any tabulation. Schedules for 58th, 59th, 60th & 61st rounds are meeting the same fate, as the earlier rounds.

The FSUs to be surveyed are decided by the NSSO office in Kolkata. Complete enumeration is done in the selected hamlet groups in the rural areas and sub-Blocks in the urban areas, and the required number is selected randomly. DES conducts pre-survey training to the field staff. The fieldwork, conducted by the investigators, is supervised and monitored by the officers and staff of the NSS units in the District Offices and in the DES Headquarters. The collected schedules are scrutinized on 100% basis in the District Offices.

Since electronic processing of the filled in schedules have not started, no processing activity takes place after completion of the field survey.

e) Time Lags

Since no tabulation is being undertaken it would not be appropriate to comment upon the time lags in dissemination of data

f) Publications

Position about various NSS rounds, work in hand and reports published is given in the table below:

Table 4.13: NSS Rounds - Reports Published

Round	Subject	Reports issued (if any)
47 th Round	Availability of some education & culture related facilities in villages of MP	Report issued after manual tabulation
54 Round	Availability of Education Road, Banks & related facilities in villages of MP	Report issued after manual tabulation
57 th Round	Quick tabulation report on slums (notified & non notified)	Report issued after manual tabulation
58 th Round	Data scrutiny and validation in process	No

g) Manpower engaged

For smooth functioning, NSS work is decentralized at State, and district level offices. At the headquarters of DES, one Joint Director, assisted by Deputy Director and other staff, supervises the work relating to NSS. In eleven of the 32 districts of the state, statistical staff at the norm of one ASO and four Investigators in each district has been provided. This field staff in eleven districts covers the entire state for the field survey. The detailed sanctioned staff given below includes the manpower deployed on NSS undertaken by DES.

Table 4.14: Manpower Deployed for NSS Activities

Designation	Staff No.
Deputy Director	1
Assistant Director	0
Statistical Officer	1
Statistical Assistant	12
Statistical Inspector	4
Computer	0
Total	18

h) Use of IT

DES has four Desktop computers (286 model) earmarked for NSSO Survey Data entry.

i) Quality

In the absence of tabulation no comments are offered on the quality of data.

4.1.19 Transport statistics**a) Agency**

The following agencies are responsible for generating data on transport:

Transport Statistics: The Transport Department has the responsibility for statistical activities related to transport statistics. The Commissioner of Transport is the nodal agency for registration of all types of motor vehicles.

Road Statistics: PWD is responsible for road length statistics.

Road Accidents: The Police Department has responsibility for data on road accidents

Passenger and Goods Traffic: The Rajasthan Road Transport Corporation is responsible for statistics related to transportation of passengers from State owned buses.

b) Outputs

Table 4.15: Statistical Outputs - Transport

SN	Statistical Output	Responsible Agency
1	Number of registered motor vehicles by type	Commissioner of Transport
2	Number of newly registered vehicles	- do -
3	Number of Drivers' and Conductors' licenses issued	- do -
4	Revenues through taxes and fees	- do -
5	Length of roads by categories/type of surface Roads & Bridges wing of PWD Department	Public Works Department
6	Motor Vehicle accidents	Police Headquarters

c) Frequency

- Data on registration of vehicles and revenue are collected are compiled each month.
- The frequency of data collection on road length is annual.
- Road Accidents data and passenger transportation data are compiled on a monthly basis.

d) Methodology

Data on Registration of Vehicles: The data on registered vehicles, and other related parameters are compiled by the Regional and District Transport Offices and sent to the Commissioner of Transport by courier every month, where the data is consolidated at the State level, tabulated, and reports generated. The State report is sent to the Government of India.

Data on Roads lengths (PWD): The data on road lengths consisting of National Highway, major District roads, other District roads, village roads, and Railways roads are collected and compiled by the Assistant Engineer posted in a sub Division. The data is then sent to the Executive Engineer posted in a District who scrutinizes the data and transmits the same to the Superintendent Engineer posted in a Division where the data is consolidated and tabulated for the Division and sent to the Chief Engineer at the State level.

Data on Public Transport System: The Depot Managers of the Rajasthan Road Transport Corporation (RRTC) collect data on passengers carried and send the same to MPRTC on a monthly basis. This data is compiled and tabulated by MPRTC, and reports generated. The data is also published in the Corporation's Annual Report.

Data on Road Accidents: Data is compiled by the Police Headquarters on the basis of information received from the District Offices and Police Stations of the Police Department.

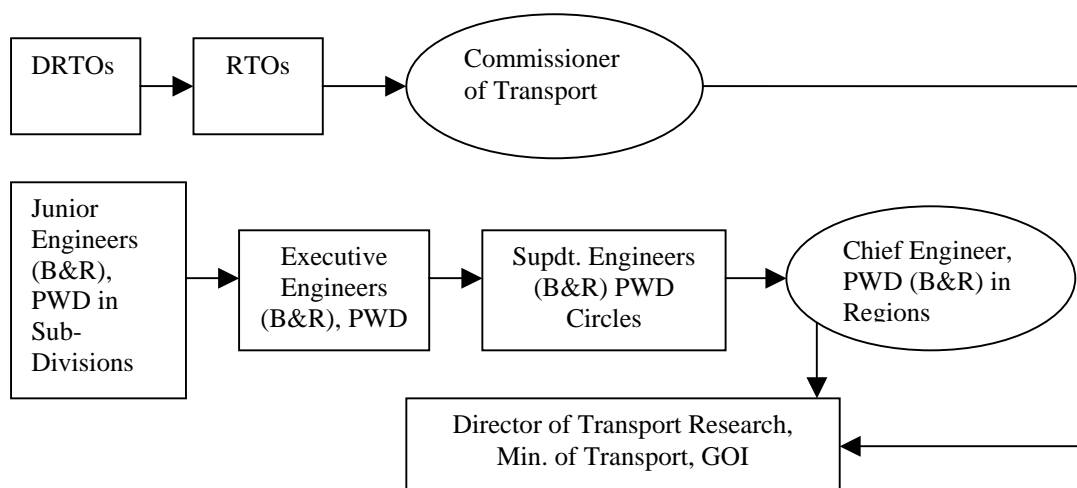
e) Returns

Standard, non-statutory forms are prescribed for reporting.

f) Data Flow

This is depicted in the chart below:

Chart 4.17: Data Flow – Transport Statistics



g) Publications

The Department brings out an Annual Administration Report wherein transport statistics are published.

h) Manpower Used.

There are eight statistical staff engaged for this activity. Details are in table below.

Table 4.16: Manpower Deployed in the Transport Department

S.N	Designation	Available Posts Staff No.
1	Assistant Director	1
2	Statistical Assistant	3
3	Computer	4
	Total	8

i) Use of IT

Registration of vehicles is on line. The Department has a full-fledged Computer Centre connected to their District Offices who provide on line data to the Centre. Processing of data is done on PCs in the Commissionerate.

j) Time lag in release of data

There is negligible time lag in respect of release of data relating to registration of vehicles. The time lag for release of data on road length is 4 months, and road accidents is 24 months, and that for passengers carried by MPRTC is also 24 months.

k) Quality

As concerns data on vehicle registration, driving licenses, revenue through taxes and fees, these are reliable and accurate. Road length statistics compiled by PWD are of adequate quality. Road accident statistics compiled by the Police Department and passenger traffic suffers due to inadequate coverage. Also, no data is generated on several transport related parameters like transport of passengers by private sector transporters, goods transport, rental of commercial vehicles with operator, maintenance and repair of road transport equipment, supporting services for road transportation services, services auxiliary to all modes of transport, cargo-handling services, storage and warehouse services, among others.

4.1.20 Statistics for local area planning

a) Agency

The responsible agency for collection and compilation of statistics for local area planning are the District Planning Committees, which have been created for purpose of preparing District Plans.

b) Outputs

Data pertaining to the following aspects of the economy of the District is being collected:

1. Area, Land use, holding size, cropping pattern, average yield of crops, Livestock, natural resources, degraded forests area, ground water level, etc.
2. Human resources – population, number of villages and towns by population levels, education
3. Employment – agricultural labourers, cultivators, industrial labour, services etc.
4. Poverty levels – details of persons below poverty line.
5. Infrastructure and public services –

- (a) Drinking water supply
- (b) Irrigation,
- (c) Banking;
- (d) Cooperatives,
- (e) Marketing;
- (f) Health Services;
- (g) Educational Institutions.

6. Industries-

- (a) Forest based;
- (b) Mineral based;

- (c) Khadi & village industries;
- (d) Medium and Small Industries;
- (e) Construction Industry;
- (f) Wholesale and Retail Trade;
- (g) Transport, Truck, Bus, Taxi, Loading Taxis;
- (h) Services – Administrative, Banking, Educational and Medical & Health Services.

c) Methodology

The data on above parameters is collected from secondary sources by the Panchayats and the municipalities and transmitted to the Chief Planning Officer, who compiles and tabulates the data at the District level and prepares the Annual Plans for approval of the District Planning Committee.

d) Staff Deployed

There are 319 statistical staff in planning and statistical cells of the panchayati raj department in offices spread across state headquarters to panchayat samiti levels. For details refer table 7.34 in chapter 7.

Table 4.17: Manpower Deployed in the Panchayati Raj Department - Planning Cell

Designation	Available Staff
Head Quarter Level	
Deputy Director	1
Statistical Officer	1
Statistical Assistant	2
Sub Total	4
District Level	
Deputy Director	31
Statistical Assistant	59
Computers	14
Sub Total	104
Total	108

Table 4.18: Manpower Deployed in the Panchayati Raj Department – Statistical Cell

Designation	Number
Head Quarter Level	
Statistical Officer	1
Statistical Assistant	3
Statistical Inspector	1
Computers	2
Sub Total	7
District Level	
Computers	31
Sub Total	31

Panchayat Samiti Level	
Statistical Assistant	173
Sub Total	173
Total	211

e) IT Tools Used.

Each Panchayat Samiti has been provided with a computer and plans are being made to transmit the data on line to the respective Chief Planning Officers. However, as of now, data compilation is and tabulation is done manually.

f) Publication

DPSO compiles district and block level statistics from secondary sources as mentioned above and publishes the District Statistical Book each year. There is a two year time lag in this publication. As of date the 2004 publication is available.

g) Time Lag

The time lag in data dissemination is 24 months.

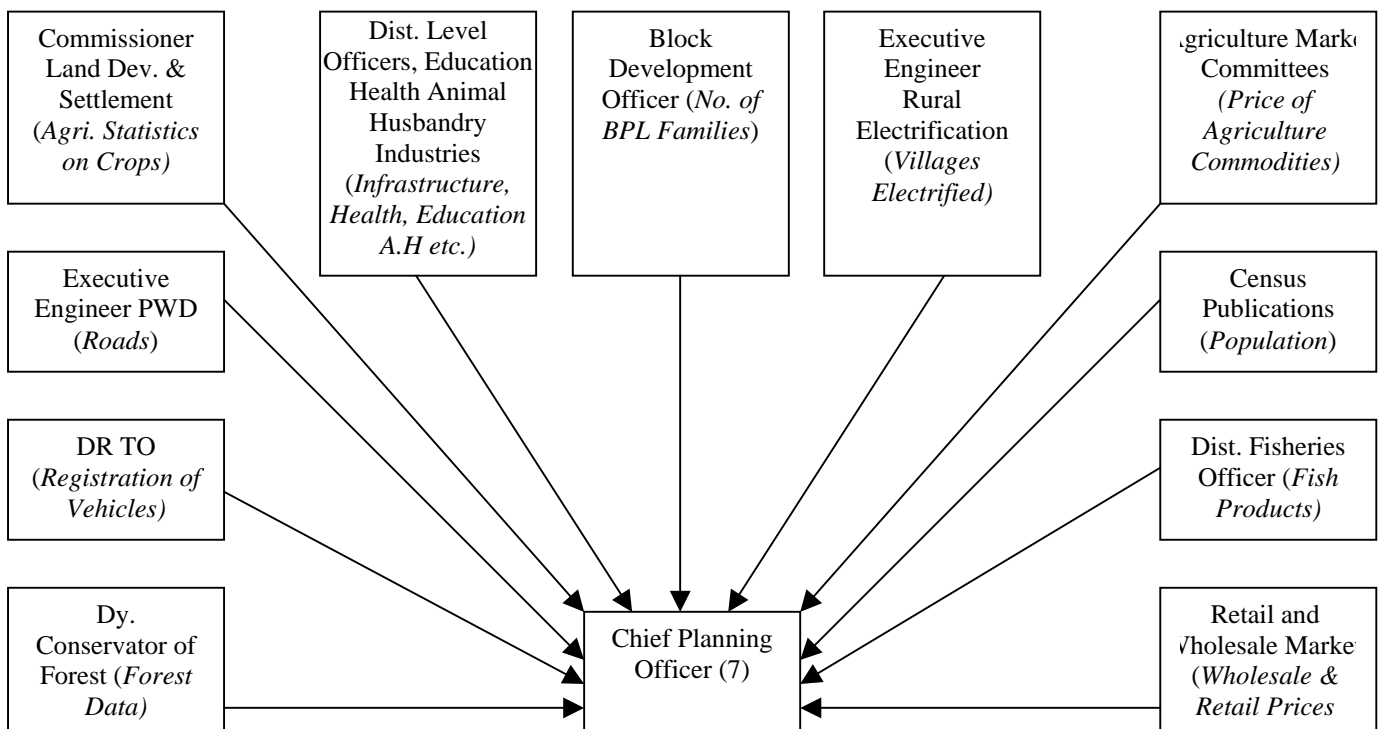
h) Data quality

Data quality is inadequate as district level disaggregated data is not available with respect to several parameters.

i) Data Flow

This is depicted in Chart below:

Chart 4.18 Data Flow- Local Area Planning



4.2 Quality of Statistical Outputs

4.2.1 Concepts and Definitions

In order to ensure that our analysis of quality of statistical outputs is clearly understood, we give below a definition of concepts used in our analysis:

Quality: There is no universally accepted definition of quality for official statistics. We have chosen a broad concept of quality based on fitness for use. In keeping with IMF's Data Quality Framework¹⁰, we have defined quality in terms of the following attributes of data that are pertinent to the use of information: (1) Adequacy; (2) Relevance; (3) Accuracy; (4) Timeliness; (5) Accessibility; (6) Interpretability; (7) Coherence¹¹. Some of these attributes such as those in serial numbers 2, 4, 5, 6 and 7 are directly observed by users; others such as, those in serial numbers 1 and 3 can be assessed only by the DES, line departments of state governments, and the primary data generating agencies. Coherence as a definition of quality has been used only where the same sets of data are released by multiple agencies within the statistical system of the state.

Adequacy: This refers to the comprehensiveness of source and other data in terms of the (i) accepted definition of the parameter which is to be statistically investigated and estimated; and (ii) agreed and accepted methodology for estimation.

Coverage: In the context of non-survey related statistical activities, coverage refers to the consistency of the components of data categories with the accepted methodology and statistical framework, which are most important in shedding light on the concerned data category. In the context of surveys, coverage refers to the extent to which the units/sample universe belonging to the target population has been covered.

Relevance: Relevance refers to the extent to which the information produced responds to the needs of the user community that the DES aims to service. While one can speak of the relevance of an individual statistic, relevance is more meaningfully assessed in terms of how well the full repertoire of available information satisfies user needs. Relevance is not a concept that lends itself to precise quantitative

¹⁰ For details refer to "Toward a Framework for Assessing Data Quality", IMF Working Paper, WP/01/25, Carson, Carol S., February 2001

¹¹ The above breakdown of quality into components is not unique neither invariant over time. Other organisations use slightly different sets of quality dimensions. For instance, Statistics Canada uses six dimensions: relevance, accuracy, timeliness, accessibility, interpretability, and coherence (see "Statistics Canada's Quality Assurance Framework", Catalogue number 12-586-XIE, Statistics Canada, 2002 <http://www.statcan.ca/english/freepub/12-586-XIE/12-586-XIE02001.pdf>); Statistics Sweden uses five: content, accuracy, timeliness, comparability/coherence, and availability/clarity (see Rosén, B., and Elvers, E., 1999, "Quality Concept for Official Statistics" pp. 621-629 in S. Kotz, C.B. Read, and D.L. Banks eds.), Encyclopedia of Statistical Science, Update Vol. 3, Wiley, New York); the OECD has developed a quality framework with eight components: relevance, accuracy, credibility, timeliness, punctuality, accessibility, interpretability and coherence (see Quality framework for OECD statistics, OECD, Paris, (see www.oecd.org/doc/m00029000/m00029990.doc); and Eurostat uses the criteria of relevance, accuracy, timeliness and punctuality, accessibility and clarity, comparability, and coherence. The use of the term quality has broadened in recent years, largely because of the Total Quality Management (TQM) movement, which has three broad criteria for quality: knowing and understanding the clients' (i.e., users') needs; involving employees in decision-making associated with meeting these needs; and continuously reviewing business processes for reengineering potential.

measurement. Rather, performance in this domain has to be assessed in terms of processes in place and broadly defined user satisfaction.

Accuracy and Reliability: Accuracy refers to the degree to which data correctly estimate or describe the quantities or characteristics that the statistical activity was designed to measure. Accuracy has many dimensions. Typically, measures of accuracy reflect sources of error in survey processes and or estimation procedures. Source data are obtained from comprehensive data collection programs that take into account state-specific conditions. Accuracy and reliability warrants that the source data adhere to the definitions, scope, classifications, valuation, and time of recording required, and that source data are timely.

Frequency: This refers to the frequency of data collection and compilation. It is expressed in terms of division of the calendar.

Dissemination: Dissemination is the release to users of data/information obtained through a statistical activity through various release media, for example, the Statistical Handbooks of state governments; electronic format including the Internet; a paper publication; a micro data file available to authorized users or for public use; a telephone or facsimile response to a special request; or presentation or television or radio interview.

Periodicity: This refers to the frequency of dissemination of statistics.

Timeliness: This refers to speed of dissemination/release i.e. lapse of time between the end of the reference period and the dissemination of the data. For one-time or ad hoc or new surveys it refers to the interval between the time when the need is made known and the appearance of data.

Accessibility: Accessibility reflects the availability of information from the statistical system. It includes the existence of suitable modes of disseminating information to different users, the availability of list of publications or searching tools that allow users to know what is available and how to obtain it, and the provision of access that is affordable and convenient to different user groups.

Interpretability: Interpretability refers to the ease with which users can understand and properly use and analyze information. It covers the availability of metadata (or information about the data), particularly descriptions of the underlying concepts and definitions used, of the methodology used in compiling the data, and of the accuracy of the data (as described above).

Coherence: Coherence refers to the degree to which data or information from different programs are compatible and can be analyzed together. It is promoted by the use of common, or at least compatible, conceptual frameworks, definitions, classifications, and collection and processing methodologies across programs.

Methodological Soundness: This implies that the methodological basis for the statistics follows nationally and or internationally accepted standards, guidelines, and good practices with respect to:

- Concepts and definitions
- Scope
- Classification/sectorization
- Basis for recording flows and stocks

4.2.2 IMF Data Quality Assessment Framework

There is growing acceptance to the use of the IMF's Data Quality Assessment Framework (DQAF) as a tool for assessing data quality¹². For the purposes of the present study, an attempt has been made to broadly apply the DQAF methodology selectively – of the five quality dimensions specified in DQAF we have focussed on the accuracy and reliability dimension¹³. The generic DQAF is given below.

TABLE 4.19: IMF GENERIC DATA QUALITY ASSESSMENT FRAMEWORK (DQAF)

Quality Dimensions	Elements	Indicators
0. Prerequisites of quality	<p>0.1 Legal and institutional environment—<i>The environment is supportive of statistics</i></p> <p>0.2 Resources—<i>Resources are commensurate with needs of statistical programs.</i></p> <p>0.3 Relevance—<i>Statistics cover relevant information on the subject field.</i></p> <p>0.4 Other quality management—<i>Quality is a cornerstone of statistical work.</i></p>	<p>0.1.1 The responsibility for collecting, processing, and disseminating the statistics is clearly specified.</p> <p>0.1.2 Data sharing and coordination among data-producing agencies are adequate.</p> <p>0.1.3 Individual reporters' data are to be kept confidential and used for statistical purposes only.</p> <p>0.1.4 Statistical reporting is ensured through legal mandate and/or measures to encourage response.</p> <p>0.2.1 Staff, facilities, computing resources, and financing are commensurate with statistical programs.</p> <p>0.2.2 Measures to ensure efficient use of resources are implemented.</p> <p>0.3.1 The relevance and practical utility of existing statistics in meeting users' needs are monitored.</p> <p>0.4.1 Processes are in place to focus on quality.</p> <p>0.4.2 Processes are in place to monitor the quality of the statistical program.</p>

¹² The IMF works with member countries in carrying out such assessments. Its Reports on the Observance of Standards and Codes (ROSC) have been helpful in identifying areas of strengths and weaknesses. The reviews look at particular aspects of data quality as defined in the DQAF framework. The assessment covers key data series that are of critical importance for sound macro-economic management. Typically, the reviews deal with statistical practices in the areas of the national accounts, prices, government finance, money and banking, and balance of payments statistics. Beyond a review of status of the series in question, the ROSC reviews deal with aspects of the institutional environment and organizational dimensions of the statistical regime.

¹³ The five DQAF quality dimensions are accessibility, serviceability, accuracy and reliability, methodological soundness, and assurance of integrity.

Quality Dimensions	Elements	Indicators
		0.4.3 Processes are in place to deal with quality considerations in planning the statistical program.
<p>1. Assurances of integrity</p> <p><i>The principle of objectivity in the collection, processing, and dissemination of statistics is firmly adhered to.</i></p> <p>2. Methodological soundness</p> <p><i>The methodological basis for the statistics follows internationally accepted standards, guidelines, or good practices.</i></p>	<p>1.1 Professionalism— <i>Statistical policies and practices are guided by professional principles.</i></p> <p>1.2 Transparency— <i>Statistical policies and practices are transparent.</i></p> <p>1.3 Ethical standards— <i>Policies and practices are guided by ethical standards.</i></p> <p>2.1 Concepts and definitions— <i>Concepts and definitions used are in accord with internationally accepted statistical frameworks.</i></p> <p>2.2 Scope— <i>The scope is in accord with internationally accepted standards, guidelines, or good practices.</i></p> <p>2.3 Classification/sectorization— <i>Classification and sectorization systems are in accord with internationally accepted standards, guidelines, or good practices.</i></p> <p>2.4 Basis for recording— <i>Flows and stocks are valued and recorded according to</i></p>	<p>1.1.1 Statistics are produced on an impartial basis.</p> <p>1.1.2 Choices of sources and statistical techniques as well as decisions about dissemination are informed solely by statistical considerations.</p> <p>1.1.3 The appropriate statistical entity is entitled to comment on erroneous interpretation and misuse of statistics.</p> <p>1.2.1 The terms and conditions under which statistics are collected, processed, and disseminated are available to the public.</p> <p>1.2.2 Internal governmental access to statistics prior to their release is publicly identified.</p> <p>1.2.3 Products of statistical agencies/units are clearly identified as such.</p> <p>1.2.4 Advanced notice is given of major changes in methodology, source data, and statistical techniques.</p> <p>1.3.1 Guidelines for staff behaviour are in place and are well known to the staff.</p> <p>2.1.1 The overall structure in terms of concepts and definitions follows internationally accepted standards, guidelines, or good practices.</p> <p>2.2.1 The scope is broadly consistent with internationally accepted standards, guidelines, or good practices.</p> <p>2.3.1 Classification/sectorization systems used are broadly consistent with internationally accepted standards, guidelines, or good practices.</p> <p>2.4.1 Market prices are used to value flows and stocks.</p> <p>2.4.2 Recording is done on an accrual basis.</p>

Quality Dimensions	Elements	Indicators
	<i>according to internationally accepted standards, guidelines, or good practices</i>	2.4.3 Grossing/netting procedures are broadly consistent with internationally accepted standards, guidelines, or good practices.
<p>3. Accuracy and reliability</p> <p><i>Source data and statistical techniques are sound and statistical outputs sufficiently portray reality</i></p>	<p>3.1 Source data – <i>Source data available provide an adequate basis to compile statistics.</i></p> <p>3.2 Assessment of source data—<i>Source data are regularly assessed.</i></p> <p>3.3 Statistical techniques—<i>Statistical techniques employed conform to sound statistical procedures</i></p> <p>3.4 Assessment and validation of intermediate data and statistical outputs—<i>Intermediate results and statistical outputs are regularly assessed and validated.</i></p> <p>3.5 Revision studies—<i>Revisions, as a gauge of reliability, are tracked and mined for the information they may provide.</i></p>	<p>3.1.1 Source data are obtained from comprehensive data collection programs that take into account country-specific conditions.</p> <p>3.1.2 Source data reasonably approximate the definitions, scope, classifications, valuation, and time of recording required.</p> <p>3.1.3 Source data are timely.</p> <p>3.2.1 Source data—including censuses, sample surveys, and administrative records—are routinely assessed, e.g., for coverage, sample error, response error, and nonsampling error; the results of the assessments are monitored and made available to guide statistical processes.</p> <p>3.3.1 Data compilation employs sound statistical techniques to deal with data sources.</p> <p>3.3.2 Other statistical procedures (e.g., data adjustments and transformations, and statistical analysis) employ sound statistical techniques.</p> <p>3.4.1 Intermediate results are validated against other information where applicable.</p> <p>3.4.2 Statistical discrepancies in intermediate data are assessed and investigated.</p> <p>3.4.3 Statistical discrepancies and other potential indicators or problems in statistical outputs are investigated.</p> <p>3.5.1 Studies and analyses of revisions are carried out routinely and used internally to inform statistical processes (see also 4.3.3).</p>

Quality Dimensions	Elements	Indicators
<p>4. Serviceability <i>Statistics, with adequate periodicity and timeliness, are consistent and follow a predictable revisions policy.</i></p>	<p>4.1 Periodicity and timeliness— <i>Periodicity and timeliness follow internationally accepted dissemination standards.</i></p> <p>4.2 Consistency— <i>Statistics are consistent within the dataset, over time, and with major datasets.</i></p> <p>4.3 Revision policy and practice— <i>Data revisions follow a regular and publicized procedure.</i></p>	<p>4.1.1 Periodicity follows dissemination standards.</p> <p>4.1.2 Timeliness follows dissemination standards.</p> <p>4.2.1 Statistics are consistent within the dataset.</p> <p>4.2.2 Statistics are consistent or reconcilable over a reasonable period of time.</p> <p>4.2.3 Statistics are consistent or reconcilable with those obtained through other data sources and/or statistical frameworks.</p> <p>4.3.1 Revisions follow a regular and transparent schedule.</p> <p>4.3.2 Preliminary and/or revised data are clearly identified.</p> <p>4.3.3 Studies and analyses of revisions are made public (see also 3.5.1).</p>
<p>5. Accessibility <i>Data and metadata are easily available and assistance to users is adequate.</i></p>	<p>5.1 Data accessibility— <i>Statistics are presented in a clear and understandable manner, forms of dissemination are adequate, and statistics are made available on an impartial basis.</i></p> <p>5.2 Metadata accessibility— <i>Up-to-date and pertinent metadata are made available.</i></p> <p>5.3 Assistance to users— <i>Prompt and knowledgeable support service is available.</i></p>	<p>5.1.1 Statistics are presented in a way that facilitates proper interpretation and meaningful comparisons (layout and clarity of text, tables, and charts).</p> <p>5.1.2 Dissemination media and format are adequate.</p> <p>5.1.3 Statistics are released on a preannounced schedule.</p> <p>5.1.4 Statistics are made available to all users at the same time.</p> <p>5.1.5 Statistics not routinely disseminated are made available upon request.</p> <p>5.2.1 Documentation on concepts, scope, classifications, basis of recording, data sources, and statistical techniques is available, and differences from internationally accepted standards, guidelines, or good practices are annotated.</p> <p>5.2.2 Levels of detail are adapted to the needs of the intended audience.</p> <p>5.3.1 Contact points for each subject field are publicized.</p> <p>5.3.2 Catalogs of publications, documents, and other services, including information on any changes, are widely available.</p>

4.2.3 Assessment of Quality of Statistical Output

The reliability and accuracy indicators that are prescribed by IMF and used by us for assessment of quality of statistical activities are:

1. Adequate basis of the source/field data to compile statistics in terms of adequacy, comprehensiveness, approximation to definition, and timeliness
2. Regular assessment of source data for coverage, sample error, response error, and non sampling error
3. Use of sound statistical techniques in data compilation and statistical analysis
4. Assessment and validation of intermediate data and statistical outputs.
5. Tracking of revisions

In our quality assessment, we have assigned the highest value to (1), (2), and (4) above. This may be termed as threshold quality indicators. Three and five above have been assigned low values.

The quality of statistical output has been classified in three qualitative categories – high, medium, and low - in terms of the extent to which the three threshold indicators are satisfied. We have used the following normative scale to assess quality:

High Quality: All the components of the threshold indicators are met plus any one of (3) and/or (5)

Medium Quality: The three threshold indicators are met.

Low Quality: The threshold indicators are not met.

APPLICABILITY of IMF – DQAF STANDARDS
Though IMF – DQAF standards are not presently applicable to the state, however, to improve the quality of statistical outputs, it is necessary that the current statistical activities being carried on should be benchmarked against the best practices.

The assessment of quality of statistical activities given in the table on next page is based on the information obtained and presented in Section 4.1 of this Chapter and the discussions of the consultants with the State Statistical Officials.

S.No	STATISTICAL ACTIVITY/ OUTPUT	Table 4.20 : QUALITY OF STATISTICAL OUTPUTS													
		Reliability and Accuracy													Timeliness: Time Lag in Release of Data in Months
		Source Data: Adequate Basis to Compile Statistics				Regular Assessment of Source Data for coverage, sample error, response error and non-sampling error	Sound Statistical Techniques		Assessment and Validation of Intermediate data and Statistical Outputs			Tracking of Revisions		Overall Assessment of Reliability and Accuracy	
		Adequacy	Comprehensive	Approximate to Definition	Timely		Data Compilation	Statistical Analysis	Against other Information	Statistical Discrepancies Assessed and Investigated	Statistical Discrepancies in statistical outputs investigated	Studies and analyses of revisions	Studies and Analyses made public		
1.	State Domestic Product Estimates	√	√	√	x	√	√	x	√	√	√	√	x	Medium	12-quick 24-provisional 36-final
2.	Estimate of Capital formation & Savings	x	√	x	x	X	√	√	x	√	x	x	x	Low	24:SDUs 60: NDCUs
3.	Estimates of District Domestic Product	x	√	√	x	X	√	√	x	x	x	x	x	Low	36
4.	Estimates of the contribution of Local Bodies	x	√	√	x	x	√	√	x	x	x	x	x	Low	12-quick 24-provisional 36-final
5.	Data on major fiscal variables	√	√	√	√	√	√	√	√	√	√	√	√	High	< 1
6.	ASI	√	√	√	x	x	√	x	√	√	√	√	x	Medium	48
7.	IIP	√	√	√	x	√	√	x	√	√	√	√	x	Medium	3
8.	Crop Area	√	√	√	x	x	√	√	x	x	x	√	√	Medium	30
8.1	Crop Production	√	√	√	√	√	√	√	x	x	x	√	√	Medium	30
9.	Compilation of WPI	√	√	√	x	√	√	x	√	√	√	√	x	Medium	6
10.	Compilation of CPI	NOT DONE													
11.	Health, Morbidity and Family Welfare Statistics	x	x	√	x	x	√	√	x	x	x	x	x	Low	72.

S.No	STATISTICAL ACTIVITY/ OUTPUT	Table 4.20 : QUALITY OF STATISTICAL OUTPUTS													
		Reliability and Accuracy													Timeliness: Time Lag in Release of Data in Months
		Source Data: Adequate Basis to Compile Statistics				Regular Assessment of Source Data for coverage, sample error, response error and non-sampling error	Sound Statistical Techniques		Assessment and Validation of Intermediate data and Statistical Outputs			Tracking of Revisions		Overall Assessment of Reliability and Accuracy	
		Adequacy	Comprehensive	Approximate to Definition	Timely		Data Compilation	Statistical Analysis	Against other Information	Statistical Discrepancies Assessed and Investigated	Statistical Discrepancies in statistical outputs investigated	Studies and analyses of revisions	Studies and Analyses made public		
12.	Education:														
12.1	Institutional Data	√	√	√	x	x	√	x	x	x	x	x	x	Low	12
12.2	Enrollment	x	x	√	x	x	√	√	√	x	x	x	x	Low	12
13.	Labour	x	x	√	x	x	√	√	x	x	x	x	x	Low	48
13.1	Employment	x	x	√	x	x	√	√	x	x	x	x	x	Low	24
14.	Housing Statistics	x	x	√	x	√	√	x	√	√	√	√	x	Low	Census: 36 months after Census Housing Board: 6
15.	Birth and death registration and population.	x	x	√	x	x	√	√	x	x	x	x	x	Low	72: CRS 24: SRS 72: MCCD
16.	Electricity production and distribution Statistics	√	√	√	√	√	√	√	x	√	√	√	√	High	12
17.	Environment and Forest Statistics.	x	√	√	√	x	√	x	x	x	x	x	x	Low	18
17.1	Water Supply and Sanitation	x	√	√	x	x.	√	√	x	x	x	x	x	Low	12
18.	Participation in NSSO surveys - Field survey, tabulation and pooling	Data of state samples have not been tabulated as yet and reports not published excepting isolated reports based on manual tabulation. Hence not evaluated for quality													

S.No	STATISTICAL ACTIVITY/ OUTPUT	Table 4.20 : QUALITY OF STATISTICAL OUTPUTS													
		Reliability and Accuracy													Timeliness: Time Lag in Release of Data in Months
		Source Data: Adequate Basis to Compile Statistics				Regular Assessment of Source Data for coverage, sample error, response error and non-sampling error	Sound Statistical Techniques		Assessment and Validation of Intermediate data and Statistical Outputs			Tracking of Revisions		Overall Assessment of Reliability and Accuracy	
		Adequacy	Comprehensive	Approximate to Definition	Timely		Data Compilation	Statistical Analysis	Against other Information	Statistical Discrepancies Assessed and Investigated	Statistical Discrepancies in statistical outputs investigated	Studies and analyses of revisions	Studies and Analyses made public		
19.	Transport: <i>Vehicle Registration</i>	√	√	√	√	√	√	√	√	√	√	x	x	High	<1
19.1	<i>Road Length</i>	√	√	√	√	√	√	√	√	√	√	x	x	High	4
19.2	Passengers carried by RSRTC	√	√	√	√	x	√	√	x	x	x	x	x	Low	24
19.3	Road Accidents	x	x	√	x	x	√	√	x	x	x	x	x	Low	24
20.	Statistics for local area planning	x	√	√	√	x	√	√	x	√	√		x	Low	24

5. DISTRICT LEVEL STATISTICAL ACTIVITIES

The Consultant visited two of the 32 District Statistical Offices. These were the DSO's of Jaipur and Ajmer. The visits to these DSOs were made to make an assessment of their (i) statistical activities vis-à-vis the quality of data generated by them in terms of adequacy/coverage, reliability, accuracy, and timeliness; (ii) manpower and IT resources in the context of their current activities and new activities and processes to be put in place for filling-in data gaps and improving data quality; and (iii) adequacy and limitations of infrastructure in the context of their current and future responsibilities. Our findings are discussed below, preceded by an overview of the key features of the District.

5.1 Key Features of the Districts Visited

5.1.1 Ajmer District

District Ajmer is situated between 25.38 to 26.52 degrees North longitude and 73.54 to 75.22 degrees East Latitude. Ajmer is renowned world over for the Dargah of the Sufi Saint Khwaja Moinuddin Chisti and the world's only temple of Bramha at Pushkar.

Ajmer District¹ is spread over 8,481 sq. km. Of which the rural area is 8147 sqkm. And the urban area is 334 sq. km. The total area of the district constitutes 2.48% of the area of the State. According to the Census 2001 the total population of the District is 2,181,670 of which males constitute 1,129,920 and females number 1,051,750. The population of the District is 3.86% of the State population. Urban population of Ajmer District forms 6.62 per cent and the rural population forms 3.02 percent of the State population. The population of SC and ST in the district stands at 3.61 % and 0.74% respectively. Workers, marginal workers and non-workers constitute 3.61%, 2.61%, and 4.05% respectively. The density of population is 257 persons per sq. km. and the Sex ratio is 931 per thousand males.

The district has 1,025 inhabited villages and 13 uninhabited villages, 9 Tehsils, 6 sub-divisions, 8 Blocks, 9 Towns, and 8 Municipalities/cantonments.

The cropped area in the district is 477 thousand hectare, which is 2.48% of the total cropped area of the State. The net-cropped area is 389 thousand hectare being 2.45 % of the State net-cropped area. The double-cropped area of 87 thousand hectares is 2.59% of the State double-cropped area. The net irrigated area is only 1.89% of the State net irrigated area. Irrigation is only from ponds (2685) and wells (74918). The district hosts 3.85% of the livestock in the State, and 34.05% of the total poultry in the State.

The registered factories in the district stood at 1, 006 in the year 2001.

The district had 2,956.3 km of roads, which constitute 3.38 % of the total road length in the State. Motor vehicles registered in the district constituted 6.82% of the total vehicle registered in the State. Number of Post Offices, Telephone Centers and Telegraph Centres stood at 4.14%, 4.37% and 1.13% respectively.

¹ Except the population Census data that relates to 2001 Census, all data pertains to 2000-01.

The district has 2,378 educational institutions, which is 3.31% of the institutions of the State. The scholars in the institutions – 452,000 – constitute 3.86% of the total students in educational institutions in the State. The literacy rate in the district is 65.06%.

District Ajmer had 13 hospitals, 17 dispensaries, 7 mother and child welfare centers, 48 Rural Primary Health Centers and 2 Urban Primary Health Centers in 2001-02. In addition, the district has 134 Aurvedic and Unani hospitals. Birth rate in rural areas in Ajmer District stood at 3.49 and in urban areas at 2.70. Death rate in rural areas was 1.88 and 4.35 in urban areas. Infant Mortality Rate was 21.77 in rural areas and 14.68 in urban areas.

The Forest area in the District was 611.70 sq km.

The district produces minor minerals viz., Asbestos, Felspar, Limestone, Mica, Quartz and Vermiculite. Among the semi-precious stones, Ajmer District produces Garnet.

All the villages and towns are electrified in the District.

5.1.2 Jaipur District

Jaipur District is located between 26.23 to 27.51 degrees North longitude to 74.55 to 76.50 degrees East Latitude. Area of Jaipur is 11,143 sq. km. The rural area is 10,405 sq. km., while the urban area is 738 sq. km. As per the population Census 2001, Jaipur District has a population of 5,251,071 persons of which 2,768,203 are males, and 2,482,868 are females. The decadal population growth of Jaipur District was 35.10 per cent, the sex ratio being 897 females per thousand males. Jaipur hosts the maximum share of 9.29% of the total population of the State. The district has 8.02% of the Scheduled Caste population and 5.82% of the Scheduled Caste population of the State. Population of workers in the District constitutes 7.84% of the workers in the State and non-workers are 10.37% of the total non-workers in the State. The population density in the District is 471 persons per sq. km. of area.

There are 13 sub-divisions, 13 Tehsils, and 13 Development Blocks in the District. Jaipur District has 2,077 inhabited villages, and 11 Towns.

Cultivated area in the District is 815 thousand hectare, which is 4.24% of the cultivated area in the State. Net Area Sown stands at 584 thousand hectare, which is 3.68% of the net area sown in the State. Area sown more than once is 231 thousand hectare constituting 6.86% of the double-cropped area of the State.

Irrigated area (Gross) stands at 422,566 hectare and the net irrigated area is 338,752 hectare. Irrigation is done mainly by wells that number 133,847 constituting 9.79% of the total wells in the State. There are also tube-wells numbering 803 which are used for irrigation.

The district has 2,323,717 heads of livestock that is 4.25 per cent of the livestock population in the state. Number of poultry in the District is 126,509.

Factories in the District (1,596) stand at 171.2% of the total registered factories in the

State.

The District has 4,106 km of roads and the registered motor vehicles number 638,214. The registered motor vehicles in the district constitute 22.68% of the motor vehicles registered in the State.

The total number of educational institutions in the District is 5,256 constituting 7.32% of the educational institutions in the State. The number of students in the district is 1,078 thousand being 9.20% of the total students in the State. There are 276 thousand SC/ST scholars in the district constituting 8.19% of the total SC/ST students in the State. Literacy rate is 70.63% in the District.

The District has 234 allopathic medicine institutions and 296 ayurvedic and unani institutions. Birth rate in rural areas in the District is 1.79 and in urban areas it is 17.56; the death rate in rural areas is 1.62 and 4.23 in urban areas. The infant mortality rate in rural areas is 3.97.

The total Forest Area in the District is 944.52 sq. km.

Jaipur District produces Iron Ore, China Clay, Dolomite, Felspar, Limestone, Mica, Quartz, Silica sand, and soapstone.

All the villages and towns in the District are electrified.

5.2 Staff Sanctioned and in Place in Jaipur and Ajmer DSOs

The number of Staff in the Jaipur and Ajmer DSOs is shown in the tables below.

Table 5.1: Staff in-position in Jaipur DSO

Designation	In Position
Statistical Officer	1
Statistical Assistants	5
Statistical Inspectors	7
Computers	0
Others (Non-technical)	2
Total	15

Table 5.2: Staff in-position in Ajmer DSO

Designation	In Position
Statistical Officer	1
Statistical Assistant	5
Statistical Inspector	5
Computer	0
Others (non-technical)	4
Total	15

5.3 Physical Facilities

5.3.1 Jaipur DSO

Office Space: The Office has been allotted a room on the terrace of the Collectorate to house the entire staff. There is no separate accommodation for the Statistical Officer, as is the general pattern in the State. Due to inadequate furniture, particularly almirahs, records and files are kept in a haphazard manner. The working space is also restricted, which adversely impacts on staff efficiency.

IT Tools: The district office has recently been provided with a PC.

Communications: The Office has been provided only one telephone connected to the Collectorate PBX. The staff is generally inaccessible by phone as the Collectorate's PBX is overburdened.

Vehicles: The Statistical Office does not have any vehicle and so the Office has to depend on the Collectorate's vehicle. This impacts adversely on field operations, particularly supervision of field activities.

5.3.2 Ajmer DSO

Office Space: The District Statistical Office is located in the District Collectorate. Two rooms have been allotted to the Office, one hall for the staff and another smaller room for the District Statistical Officer. The space though better than the Jaipur DSO is nonetheless inadequate.

IT Tools: The DSO has recently been provided with a computer.

Communications: The DSO has been provided an independent telephone connection.

Vehicles: The DSO has no vehicles and uses the Collectorate's vehicle if available. This adversely impacts on field operations of the DSO.

5.4 Duties Assigned to Jaipur and Ajmer DSOs

Duties assigned to the District Statistical Offices of Jaipur and Ajmer are similar to other DSOs. The DSOs are tasked with collection of data as required for various statistical activities such as:

- Vital Statistics, National Sample Survey,
- Timely Reporting Scheme,
- Various Plan Schemes operating in the District,
- Data collected for state sample of NSSO programme,
- Price Collection for various indices like the CPI, Wholesale Price Index, Animal Product Prices, Prices of Essential Commodities, Building Construction

The DSOs are also engaged for conducting censuses and surveys:

- Agricultural Census,

- Economic Census,
- Livestock Census,
- Agricultural Input Surveys.
- Minor irrigation census

The District Statistician is assigned the task of preparation of the publication District Outline that is printed by the Directorate of Economics & Statistics. DSO also prepares a Socio-Economic Review and District at a Glance of the District

Other works pertaining to the collection and tabulation are also assigned to DSOs by the local administration, for example:

- Land Record
- Election Data
- Famine Relief works
- Collection of Annual Survey of Industries Returns,
- Conducting the Crop Cutting Experiments for both the GCES and Crop Insurance.

In addition, the District Collector assigns DSOs the task of data collection for specific purposes, for example elections.

5.5 Data Collection Mechanism

The District Statistics Offices that were visited, like other DSO's under the Directorate of Economics and Statistics, are engaged in collection of primary as well as secondary data at regular intervals and maintenance of appropriate database for planning purposes.

Collection of Primary data is done through the Statistical Assistants as well as the Statistical Investigators through execution of selected sample studies. The sample unit may be a house, a village, an industry, an enterprise and the method of collection of requisite primary data is usually in the form of reports received in prescribed proformae or personal interview or combination of both.

Secondary data is collected from various organisations like the District Level Offices under various Departments as well as non-government organisations on various socio-economic aspects relating to the district. The secondary data collected by the District Statistics Offices are usually the primary data collected by other agencies as well as the information generated through their administrative process. Besides, secondary data relating to the district are also collected from important publications of major studies conducted like the population census, economic census, livestock census, agriculture census etc.

The data collection mechanism in respect of certain items is discussed hereunder;

5.5.1 Collection of Primary Data

- (a) **NSS:** The field work, under various rounds of NSS, of state sample is done through the Statistical Investigators posted to the District Statistics Offices. Their work is supervised by the Statistical Assistants of the district. Soon after

execution of the samples under NSS, the filled-in schedules are scrutinized and transmitted to the DES headquarters preferably at the end of each quarter.

- (b) **Housing Statistics:** Requisite data in respect of constructions costing more than Rs.50,000/- is collected from all urban localities having population more than 10,000. Cost of building materials are collected from private contractors engaged in construction activities through urban local bodies and the Executive Engineers of the Public Works Department. Data pertaining to a district is collected by the respective District Planning and Statistics Office through its staff from the source agencies. The data so collected after due scrutiny gets compiled and transmitted to the DES at the end of each quarter for onward transmission to the National Building Organisation (NBO).
- (c) **Civil Registration:** Registration of Births and Deaths in accordance with the Births and Death Registration Act 1969 and its enforcement by the registering authority. Birth and Death Certificates are issued to the legal guardians or the legal heirs as the case may be. Besides, estimated vital rates, deaths classified by age, cause of death, infant mortality, data on the age and education of mother, order of birth, birth spacing, age at marriage, etc are also made available through this activity.
- (d) **Economic Census:** Data on the Economic Census is collected through field agencies under the over all coordination and supervision of the District Planning and Statistics Officer who upon collection of the same scrutinises the data collected and transmit the same to the DES for further needful action.

5.5.2 Collection of Secondary Data

- (a) **Official Statistics:** The district level statistical publications, such as the District Statistical Outline, are the important publications of the district for which necessary data are collected by the DSOs. These publications are usually updated and published at regular intervals and preferably annually. These publications contain a large volume of secondary data collected from different agencies. Some such agencies are indicated below:
 - i. Data on area, population, literacy, housing condition, religion, social groups, sex, age structure, employment status etc for the districts are collected from the Directorate of Census.
 - ii. Data on natural resources like soil, water, stock of minerals, forest cover, environment etc for the districts are collected from district level officers of respective departments.
 - iii. Data on development infrastructure for the districts like road, irrigation projects, industrial infrastructure, health infrastructure, education infrastructure, and infrastructure on transport, communication, tourism, rural development, water supply etc are collected from district level officers of respective departments.
 - iv. Data on production of goods and services and the present level of derivation of utilities as a result of the development endeavours for the districts on Agriculture, Horticulture, Forest, Fishery, Industry, Animal Husbandry, Textiles, Energy, etc are collected from respective district level officers.

- v. Socio-economic, social welfare and human resources data for the districts on Water Supply, Sanitation, Rural Development, Labour, ST and SC Development, Women and Child Development, Education, Health, Law and Order etc are collected from the respective district level officers..
- (b) **DES Publications:** The District Planning and Statistics Offices also collect relevant data for the DES for preparation of Districts at a Glance and District wise Socio-economic Indicators. Data for the purpose are collected by the DSOs from different secondary sources and transmitted to the DES for necessary compilation and issue of the publications.

5.6 Constraints

The following constraints have been pointed out by the District Statistical Offices:

Inadequately skilled staff: The DSO staff, though having the minimum prescribed qualifications, do not have adequate skills in statistical methods and systems. Also, none of the DSO staff are computer literate.

Inadequate IT infrastructure and Office Equipment: Both the DSOs have no IT equipment and no office equipment like copiers. As a result all statistical operations are performed manually that increase the probability of errors creeping in with respect to field/source data.

Inadequate stationery: Both the DSOs visited had inadequate supply of stationery, particularly the Jaipur DSO.

Inadequate furniture: The document storage furniture is inadequate with the result that important data records are kept in an unorganised manner.

Communications and connectivity: The communications and connectivity infrastructure is virtually non-existent. For example apart from one telephone connection there is no other communication infrastructure.

Restricted Staff Mobility: The visited DSOs have no vehicles as a result of which field operations and supervision suffers.

5.7 Suggestions

The following suggestions are offered for consideration:

- Adequate IT infrastructure and connectivity should be established – see Chapter 6 for details
- DSO staff should be provided training both in statistical methods and IT.
- The physical infrastructure of DSOs should be improved – see Chapter 8 for details
- Vehicles should be provided to improve staff mobility for field operations.

6. ASSESSMENT OF IT RESOURCES

The current availability and requirements of IT are discussed below. Our estimates for additional requirement of IT resources have been derived on the basis of certain assumptions as discussed at appropriate places in this chapter.

6.1 Available IT Hardware Resources – DES Head Quarters

The available IT hardware resources in DES headquarters and DSO's, is given in table below.

Table 6.1: Available IT Resources in DES – Head Quarters

Description	Broad Configuration	Numbers working properly	Numbers not working properly
Servers	128MB RAM/20GB HDD/Tape Drive	1	-
Desktops	PC286 1MB RAM/40MB HDD	-	16
	PC486 8MB RAM/1.2GB HDD	1	-
	Pentium I 16MB RAM/1GB HDD/CD	3	2
	Pentium III 128 MB RAM/40GB HDD/CD	6	-
	Pentium IV 128 MB RAM/40GB HDD/CD	5	-
	Pentium IV 256MB RAM/80 GB HDD/DVD	6	-
	Pentium IV 256MB RAM/80 GB HDD/DVD	52 ¹	
Laser Printers	HP/Samsung	5	-
	Konika Minolta	10	
	Line Printer	01	
	UPS	32	
Desk/Inkjet Printers	HP/Canon	4	-
Dot Matrix Printers	4	4	-
UPSs	2 KVA	1	-
	500 VA	66	-
CD Writers	-	4	-

None of the computers are under an annual maintenance contract. The computers are maintained on a call basis.

6.2 Software Available

The following software is available.

¹ These computers have been provided recently

a) *Off-the-shelf software*

Table 6.2: Available off-the-shelf Software

Description of Software	Version if any	Number of copies available
MS Windows for desktops (95 / 98 / 2000 / XP)	Windows 95/2000/XP/NT	5/5/10/1
Ms word	Office 2003/XP	16
MS Excel	Office 2003/XP	17
MS PowerPoint	Office 2003/XP	18
MS Access	Office 2003/XP	19
Foxpro(Visual studio)	Version2.3	1
Norton Antivirus	Version 2005	7
SPSS	Version6	2

a) *Application Software*

Table 6.3: Available Application Software

Name of the Software	Application (Purpose)
Payroll System	Processing of salary Bill
NSS	NSS Data entry/validation and tabulation
TRS	TRS Data entry / validation and tabulation
CRS	Data entry and Tabulation of Births and Deaths Registration

6.3 Availability of Web-sites and Web-servers

All of the computers at the DES – head quarters are networked. There is no connectivity between the other two main offices, line departments with statistical cells, district offices, taluk offices and the central office. There is also no connectivity between the internal sections, department and other allied line departments.

Connectivity to the internet is also not available. However there is no website hosted by the Directorate. The Directorate has recently procured a web server and the website is under development.

6.4 Data Volume and Storage

Table 6.4: Data volume and Storage

Data Volume			Data Storage		
Nature of Data	Unit of Data	Number of Units Per Year	Devices	Number of Units Per Year	Volume Store
NSS schedules	4-5 lacs records for each round	-	PC only	-	-
TRS Schedules Rabi and Kharif production	70000 records twice in a year	-	-	-	-
Civil Registration	22 lacs records	-	PC Only	-	-

Approximately 30 Lakh records per year are being generated from various schemes for which the data entry for needs to be done. Some schemes being periodic require the data to be entered within a short period of time. However due to limited computer infrastructure and manpower resources, there is a problem in finishing this work in time and with the desired quality.

6.5 Availability of IT Staff

Table 6.5: IT Staff Available

Nature of skill		Number of persons available with the skill	Experience available (No .of Years)
1.	Application of Statistical methods	8	5
2. Use of IT Tools including programming skills	Data Entry	4	8
	Analysis Tools	0	0
	Presentation Tools	1	13
	Database Management	1	13
3.	Analytical skills including report writing	0	0

6.6 Training of IT Staff

Some of the staff have received training in IT software applications.

Table 6.6: Training of IT Staff

Type of Training Received	Diploma Course	Degree Course	Self Taught
Word Processing Unit	1		1
Spreadsheet Skills			1
Presentation Skills			1
Training on Statistical Packages			4 for SPSS

Table 6.7: IT Training Needs Assessment

Sl No.	Staff Category	Office	TRAINING REQUIRED (Total Numbers)							
			Computer Orientation - Basics	Computer Orientation - Advanced	RDBMS - Basics	RDBMS - Advanced	Statistical Analysis - Basic	Statistical Analysis - Advanced	Hardware Troubleshooting	Other Job Specific Training
1	DES Office	DES (1)	563	159	147	379	141	36	3	113
2	Line Dept.	Agriculture Department	2	1	1	1	1	1	0	0
3	Line Dept.	Board of Revenue	31	8	8	20	9	1	0	6
4	Line Dept.	Animal Husbandry	24	6	6	16	7	0	0	5
5	Line Dept.	Sheep & Wool	1	0	0	1	0	0	0	0

SI No.	Staff Category	Office	TRAINING REQUIRED (Total Numbers)							
			Computer Orientation - Basics	Computer Orientation - Advanced	RDBMS - Basics	RDBMS - Advanced	Statistical Analysis - Basic	Statistical Analysis - Advanced	Hardware Troubleshooting	Other Job Specific Training
6	Line Dept.	Fisheries	5	2	1	3	2	1	0	1
7	Line Dept.	Irrigation	1	0	0	0	1	0	0	0
8	Line Dept.	Forest Department	1	1	1	1	0	1	0	0
9	Line Dept.	Rural Development	9	2	2	6	3	0	0	2
10	Line Dept.	Tribal Area Development	4	1	1	2	2	0	0	1
11	Line Dept.	Panchayti Raj Department	3	1	1	2	1	1	0	1
12	Line Dept.	Panchayti Raj	6	2	2	4	1	1	0	1
13	Line Dept.	Local Bodies	4	1	1	1	3	0	0	1
14	Line Dept.	Directorate of Tourism	4	1	1	2	2	0	0	1
15	Line Dept.	Directorate of Transport	11	3	3	7	4	0	0	2
16	Line Dept.	Evaluation Department	87	22	18	50	34	0	0	17
17	Line Dept.	Agricultural Census	15	5	4	9	4	3	0	3
18	Line Dept.	Industries	5	1	1	2	3	0	0	1
19	Line Dept.	Medical & Health & Family Welfare	23	7	6	14	7	2	0	5
20	Line Dept.	Research Cooperative Societies	12	3	3	8	4	0	0	2
21	Line Dept.	Urban Development & Housing	2	1	1	1	1	0	0	0
22	Line Dept.	Labour Commissioner	5	1	1	3	2	0	0	1
23	Line Dept.	Director Employment	3	1	1	2	1	0	0	1
24	Line Dept.	Civil Supplies Department	3	1	1	1	2	0	0	1
25	Line Dept.	Tax Research Cell	2	1	0	1	1	0	0	0
26	Line Dept.	Planning Department Plan Finance Group	9	3	2	5	4	1	0	2
27	Line Dept.	Institutional Finance Group	6	2	2	3	2	1	0	1
28	Line Dept.	Monitoring Group	12	4	3	7	4	1	0	2
29	Line Dept.	Manpower Group	17	5	4	9	6	2	0	3
30	Line Dept.	Economic Policy & Reforms Council	7	3	2	3	3	2	0	1
31	Line Dept.	Secondary Education	16	5	4	10	5	1	0	3
32	Line Dept.	Elementary Education	6	2	2	3	2	1	0	1
33	Line Dept.	Adult Education	1	0	0	0	1	0	0	0
34	Line Dept.	Social Welfare Department	11	3	3	6	4	1	0	2

6.7 Constraints

6.7.1 Hardware Constraints

Currently the department has 92 machines out of which 16 machines are PC286 and two machines are Pentium I machines. Out of the 16 PC286 only four are working

and are being used for data entry. These machines are very slow and have limited memory and hard disk capacity. The current UPS systems do not have a proper power backup as the batteries are worn out.

There is an acute shortage of machines for data punching and data analysis since most of the present machines are very old and outdated and many of them are not in working condition. The machines are so obsolete that the spares for these are also not available in the market. No service provider is ready to take the maintenance of these machines.

6.7.2 Software limitations

Most of the machines are operating on MS Windows 95/2000 while other have MS Windows XP installed on them. The server has MS Windows NT installed on it. The SPSS software is installed on two machines but due to lack of formal training, there is no technically skilled person to operate it. Most of their work is being done on MS Office packages. Basic software like MS Excel is being used for generation of all the financial reports and for other administrative work.

NSS conducts regular surveys resulting in large amount of data. The software provided by NSS is basic and supports only minimal tabulation. Full-fledged software with adequate training for tabulation of this data is required.

Only few machines are preloaded with Norton antivirus. Due to non-availability of internet connection the virus scan software is not updated on a regular basis. Large numbers of viruses therefore remain undetected leading to data corruption and loss.

6.7.3 Computer Networking

The Directorate has one PIV server with 128 MB RAM, 20 GB Hard disk and a tape drive. This server is being used as a stand-alone machine and is not interconnected with other machines. There is a LAN (Local Area Network) connecting the machines within the directorate. Though the networking switches and the adequate software is installed and the cabling is being done in one section of the EDP cell, it is not functional. This is due to lack of proper networking configuration setup.

They have hosted a website '<http://des.rajasthan.gov.in>' but it is not being used or updated since the staff is not aware of this website.

The non-availability of E-Mail/WAN facility between headquarters and the district offices owing to the geographical hurdles delays the receipt of time bound data within reasonable time.

6.7.4 Data Storage and Backup

Data backup is being maintained using floppy, which is not a suggested medium for maintaining data. Floppies are used for data backup. There is also no adequate system for the offline data backup. Strategies for both online and offline data backups need to be put in place in order to ensure the safety of data.

6.7.5 Working Environment

The work area needs to be air-conditioned and dust free for ensuring longevity of the computers and related equipment. They need to install a proper power backup system. The present power backup system is not efficient enough and is outdated.

Moisture levels need to be controlled in the computer rooms. This is possible by replacing the existing coolers with air-conditioners. In the EDP cell out of the five installed air-conditioners only one is functioning properly. These need to be changed to ensure a dust free work environment. Once the air-conditioners are installed the work environment will be more congenial to working, increasing the productivity of staff members.

6.7.6 Manpower

At present the Directorate has only two diploma holders and two self-taught users. Four users were trained for the SPSS package, but according to the users the SPSS training was not adequate for them and their working knowledge of the SPSS package is very low. They are technically not strong enough to operate the package.

6.8 Assessment of Additional IT Resources

The need for additional IT resources has been assessed on the basis of the volume of data handled and the related data processing work load of the operational staff, and the need to access IT resources by the supervisory and top management staff. Assumptions used in the estimation of IT hardware and Software are listed below.

Table 6.8: Assumptions in the estimation of IT hardware and Software

S.No	Equipment	Recommendation
1.	Servers	The servers are proposed for providing domain facilities to DES state offices. One domain controller will comfortably accommodate 25 users. Beyond this, either a more powerful server; or an additional server is recommended. Servers may be required, optionally, for web hosting and for File transfer.
2.	Desktop Computers	All officers in Group A: One PC and one printer with a low-end personal UPS (in case centralized UPS is not available) is recommended. All functional IT Staff: One PC each. Statistical & Administrative Cells: Minimum two computers (one computer only in case a single resource available in that cell). The actual number of computers for larger cells / offices is dependent primarily on the number of desk-based staff in Grade B & C working in that cell. On an average, one computer for two Grade B staff and one computer for four Grade C staff has been estimated. In case the cells are very large (more than 10 Grade B and C officers), the estimation has been tuned based on practical

S.No	Equipment	Recommendation
		<p>considerations. The eligibility criteria based on designations is mention in the table on details on deployment of PC's.</p> <p>Line Departments: Line department Statistical staff needs to be enabled to compile their statistics and provide it to the DES. Some line departments already have good computer systems in place, which generate this data as part of their normal process. Irrespective, it is desired that all important line departments be provided with limited computing resource to ensure the proper availability of data. Most line departments can thus be given equipment similar to a statistical cell, as defined above. In very special cases when a large infrastructure may be required, a server-based configuration should be provided.</p>
3.	Laser printers	One colour laser printer and heavy-duty network laser has been proposed for each DES state office. All statistical cells and administrative cells will have at least one low-end laser printer per five desktop computers.
4.	DeskJet printers	One A3 DeskJet printer is provided at the state central facility. They are also provided exclusively for Joint Directors for convenience in their low volume colour-printing requirement.
5.	Line printer	Data entry and check listing being decentralized to district offices, line printers have not been recommended.
6.	Scanners	Scanners are proposed for the central facility.
7.	UPS	UPS proposed are of two types – on-line (5kVA / 3 kVA) UPS that can support a server, some desktops and associated peripherals; as well as low-end 750VA UPS for individual computers.
8.	Backup devices	We have recommended simple backup systems like DAT/DLT drives for the server-based configurations. CD-Writers have been configured for all the desktops. It may be desirable, looking at the changes in technology, to have on-line backup devices like NAS/DAS/SAN. Optionally, fully functional on-line replicated servers can also be considered.
9.	Other equipment	For the DES Headquarters, one projector and notebook are proposed for presentation and in-house training needs. A GIS workstation has also been provided.
10.	Local Area Networking	All computers are to be connected to each other within an office. In the DES headquarters, the desktops will be linked to the domain server(s) using network switches. In the offices that do not have a server, peer-to-peer workgroup networks will be established.
11.	Internet connectivity	At the minimum, broadband is proposed for all the

S.No	Equipment	Recommendation
		offices. In extreme cases, dial-up connectivity can be considered. At the headquarters, the broadband connection can be of much higher bandwidth (say 512KB or more). In case T1 leased lines are used (especially in the case of in-house web server), these can be shared for internet access.
12.	Web space	The DES should have a web site with statistical reports compiled by them for dissemination. The DES can choose to have space bought out on an external server; or maintain an in-house server. Specialist staff, a generator and leased line connectivity will be mandatory for an in-house web server; hence it has not been recommended.

6.8.1 Assessment of Hardware Requirements and Estimated Cost of Procurement

The available and required IT resources in DES, DSOs, and line departments are given below in Tables 6.9 to 6.13 Also, the deployment of the recommended additional computers among DES staff is provided in Table 6.9

Table 6.9: Available and Required IT Resources in DES

SI No	Particulars	Available	Required	Net Requirement	Approx Unit ² cost (Rs.)	Approx Total Cost (Rs.)
1.	High end server	-	1	1	1,00,000	100000
2.	FTP/E-Mail/ Web Proxy Server	1	1	1	80,000	80000
3.	Desk tops	79 ³	114	35	35,000	1225000
4.	GIS Workstation	-	1	1	80,000	80000
5.	Plotter	-	1	1	1,20,000	120000
6.	Laser and DMP printers	8	8	0	50,000	0
7.	Ink Jet Printers	4	4	0	5,000	0
8.	Scanners	-	2	2	6,000	12000
9.	Lan(wired/wireless)	-	1	1	50,000	50000
10.	LCD Projector	-	1	1	1,40,000	140000
11.	Lap Top	-	1	1	1,00,000	100000
12.	UPS – 5 KVA ⁴	-	1	1	90,000	90000
13.	UPS – 500 VA	-	114	114	3,000	342000
14.	DAT Drive – Back UP	1	1	0	30,000	0
15.	Back up – Low end	-	1	1	4,000	4000
16.	Computer Furniture	-	114	114	4500	513000
					Total	2856000⁵

² Price taken for calculations is the street price as on October 11, 2006, at New Delhi

³ Older 286 machines are not reckoned as they are obsolete

⁴ The existing UPS is 2 KVA

6.8.2 Recommended Deployment of Desk Tops at DES Head Quarters

Table 6.10: Distribution of PCs among DES Staff at Head Quarters

Designation	IP ⁶	Additional Requirement ⁷	Total	Desk Tops ⁸
Director	1		1	1
Joint Director	3		3	3
Deputy Director	4		4	4
Assistant Director	4	2	6	6
Statistical Officer	25	1	26	26
Statistical Assistant	64	4	68	34
Statistical Inspector	15	14	29	15
Computer	13	12	25	25
Total	129	33	162	114

6.8.3 Software Requirements in DES Head Quarters and Estimated Cost of Procurement

Table 6.11: Requirements of IT - Software Resources in the DES Headquarters

SI No	Particulars	Available	Required	Net Requirement	Approx Unit Cost ⁹ (Rs.)	Approx Total Cost (Rs.)
1.	Windows 2000 Server	-	2	1	25,000	25,000
2.	Anti – Virus	-	1	1	30,000	30,000
3.	RDBMS	-	1	1	1,00,000	1,00,000
4.	SPSS/STATA	-	1	1	1,00,000	1,00,000
5.	Data warehousing s/w		Optional			
6.	Encryption s/w		Optional			
7.	Back up and disaster recovery s/w		Optional			
					Total	2,55,000¹⁰

6.8.4 Requirement of Additional Hardware/Software resources in DSO's and Cost of Procurement

Table 6.12: Ideal IT Infrastructure of DSO

SI No	Particulars	Quantity	Approx Unit cost (Rs.)	Approx Total Cost (Rs.)
1.	Server – Low end	-	1,00,000	1,00,000
2.	Desk tops	5 ¹¹	25,000	1,25,000

⁵ The following costs have to be factored in , Annual maintenance costs @ 12-15% of Hardware value every year , Hard ware upgrades @ 20% of Hardware value every year and Solid cell batteries @ 20% of UPS, Site Hosting Charges @ Rs.10,000/- Per year.

⁶ 'IP' Stands for Staff In Place

⁷ Refer chapter 7 for calculation of additional staff

⁸ Up to the rank of SO and all EDP personnel the ratio of computers is estimated at 1:1 and 1:2 for subordinate ranks

⁹ Price taken for calculations is the street price as on October 11, 2006, at New Delhi

¹⁰ MS office programs are assumed to be acquired pre-loaded with the new hardware and hence no separate provision is made

SI No	Particulars	Quantity	Approx Unit cost (Rs.)	Approx Total Cost (Rs.)
3.	Dot Matrix Printer	1	40,000	40,000
4.	Ink Jet Printer	1	4,000	4,000
5.	Photostat Machine	1	2,50,000	2,50,000
6.	Air Conditioner	1	25,000	25,000
7.	Computer tables	5	2,000	10,000
8.	UPS – 3 KVA	1	70,000	70,000
9.	UPS – 500 VA	5	3,000	15,000
10.	LAN – (wired/wireless)	Set	50,000	50,000
11.	Back UP – DAT	1	30,000	30,000
12.	Optional Software	1	50,000	50,000
13.	Windows 2000 server s/w	1	25,000	25,000
14.	Anti virus s/w	Set	20,000	20,000
15.	RDBMS	1	1,00,000	1,00,000
16.	Total approx costs for one DSO			9,14,000
17.	Total approx costs for thirty two DSO's			2,92,48,000

6.8.5 Line Departments

Table 6.13: Requirements of IT - Hardware resources in the Line Departments

SI No	Particulars	Available Quantity	Additional Requirement	Approx Unit cost (Rs.)	Approx Total Cost (Rs.)
Board of Revenue¹²					
1.	Desk tops	-	2	35,000	70000
2.	Ink Jet Printer	-	1	4,000	4000
3.	Dot Matrix Printer	-	1	60,000	60000
4.	UPS – 500VA	-	2	4,000	8000
5.	Anti virus	-	1	30,000	30000
6.	CD Writer	-	1	5,000	5000
Sub Total					177000
Directorate of Family Welfare¹³					
Directorate of Public Health					
7.	Desk tops	-	2	35,000	70000
8.	Ink Jet Printer	-	1	4,000	4000
9.	Dot Matrix Printer	-	1	60,000	60000
10.	UPS – 500VA	-	2	4,000	8000
11.	Anti virus	-	1	30,000	30000
12.	CD Writer	-	1	5,000	5000
Sub Total					177000

¹¹ There are some DSO's with old machines and others with no machines, , therefore five machines are recommended on an incremental basis

¹² The Board of Revenue has two Celeron TM PCs with Printer for processing Crop Estimation Survey data and the Rainfall data, further the Agriculture Department has computers up to sub-district level duly net worked up to the State level

¹³ The Directorate is computerized and there are PCs at sub divisional level duly networked with the central server and the networked printer with facilities for on line information. The software is provided by the NIC under an MOU.

SI No	Particulars	Available Quantity	Additional Requirement	Approx Unit cost (Rs.)	Approx Total Cost (Rs.)
Directorate of Primary Education					
13.	Desk tops	-	2	35,000	70000
14.	Ink Jet Printer	-	1	4,000	4000
15.	Dot Matrix Printer	-	1	60,000	60000
16.	UPS – 500VA	-	2	4,000	8000
17.	Anti virus	-	1	30,000	30000
18.	CD Writer	-	1	5,000	5000
Sub Total					177000
Department of Labour					
19.	Desk tops	-	2	35,000	70000
20.	Ink Jet Printer	-	1	4,000	4000
21.	Dot Matrix Printer	-	1	60,000	60000
22.	UPS – 500VA	-	2	4,000	8000
23.	Anti virus	-	1	30,000	30000
24.	CD Writer	-	1	5,000	5000
Sub Total					177000
Forest Department¹⁴					
25.	Desk tops	-	3	25,000	75,000
26.	UPS – 500VA	-	3	4,000	12,000
27.	Laser BW Printer	-	1	60,000	60,000
28.	Back up DAT		1	30,000	30,000
29.	Anti virus		1	30,000	30,000
30.	RDBMS		1	50,000	50,000
Sub Total					2,57,000
Transport Department¹⁵					
Total					9,65,000

6.8.6 Cost of Additional IT Resources in DES, Divisional Offices, DSO's and Line Departments

Table 6.14: Total estimated costs for IT Infrastructure for DES and Line Departments

Details	Approximate costs (Rs.)
Requirements of IT - Hardware resources in the DES Head Quarters	28,56,000
Requirements of IT - Software resources in the DES Head Quarters	2,55,000
Requirements of IT – Hardware/ Software resources in the DSO's offices	2,92,48,000
Requirements of IT – Hardware/ Software resources in the Line Departments	9,65,000
Total	3,33,24,000

¹⁴ The Department is computerized fully with facilities for video conferencing and networking with the Conservator of Forests in the ranges. But no IT tool is used for statistical work, and compilation and tabulation of data is mostly done manually.

¹⁵ Registration of vehicles is on line. The Department has a full-fledged Computer Centre connected to their District Offices who provide on line data to the Centre. Processing of data is done on PCs in the Commissionerate.

7. ASSESSMENT OF HUMAN RESOURCES

This Chapter provides an assessment of manpower resources of DES, and the line departments from the perspectives of (i) strengthening the State's statistical system through the much required improvements in quality of statistical outputs, as discussed in Chapter 4, (ii) capacity/capability of the statistical system to effectively respond to new demands for data arising from internal (Indian) economic and governance reform processes like privatization and devolution of power and authority to local bodies, and external factors like globalization. In this context, the Consultant has taken note of the fact that in view of the rapidly changing and dynamic economic environment, the concept of capacity cannot be viewed in static terms, but must incorporate the notions of sustainability and the ability to renew and adapt the statistical system to changes. Our assessment of optimum manpower required has factored in the use of increased IT resources.

A Macro overview of the staff scenario – current and optimum requirement is given in 7.1

7.1 Macro Review

It can be seen from the following tables that,

- Total available manpower is 823 at the DES and Line Departments
- Total Estimated optimum manpower is 952
- Total additional required manpower is 129
- Activities with resource gaps are Health and Family Welfare Statistics and Education and Literacy Statistics
- Activities for which no staff are assessed are recommended are housing statistics, water and sanitation Statistics.¹
- Activities with surplus staff are none.

Table 7.1: Over view of Staff Scenario – Head Quarter level

SN	Activity	Available Staff	Optimum Requirement	Staff Resource Gap
1	SDP, DDP, CF&S, C of LB's	24	24	0
2	Industrial Statistics – ASI, IIP	18	23	5
3	Crop Area and Production statistics	41	41	0
4	Price Statistics – WPI and CPI	9	11	2
5	Health, Family Welfare	269	354	85
6	Education and Literacy Statistics	62	64	2
7	Labour and Employment	5	5	0
8	Housing Statistics	0	0	0
9	Registration of Births and Deaths	16	37	21
10	Forestry	1	7	6
11	Water and Sanitation Department	0	0	0
12	Participation of NSSO Surveys	18	23	5

¹ The recommended mode of data collection in case of Housing and Water and Sanitation statistics is adhoc sample surveys

SN	Activity	Available Staff	Optimum Requirement	Staff Resource Gap
13	Transport Statistics	8	11	3
14	Statistics for Local Area Planning	319	319	0
15	Staff posted across activities	33	33	0
Total		823	952	129

7.2 Available Manpower Resources

The total statistical manpower in position in DES, and in the Line Departments is 823.

Table 7.2: Total Statistical Cadre - Staff in Position for Rajasthan

SN	Location	Staff Numbers
1.	Directorate of Economics & Statistics	129
2.	Line Departments	694
Total		823

Table 7.3: Statistical Manpower in Place at the DES and DESO's

SN	Designation	Manpower In Place
1	Director	1
2	Joint Director	3
3	Deputy Director	4
4	Assistant Director	4
5	Statistical Officer	25 ²
6	Statistical Assistant	64
7	Statistical Inspector	15
8	Computer	13
Total		129

Table 7.4: Statistical Manpower in the Line Departments for Core Statistical Activities

SN	Activity	Agencies Involved	Manpower In Place
1	Agriculture Statistics	Board of Revenue	27
		Department of Agricultural Census	3
		Sub Total	30
2	Health Statistics	Department of Women and Child Development	1
		Rajasthan Health System Development Project	1
		Department of Health Services	4
		Department of Ayurveda	1
		Directorate of Public Health	17
		Directorate of Family Welfare	245
Sub Total		269	
3	Education Statistics	Directorate of Continuing Education	1
		Department of Secondary Education	16
		Department of Primary Education	45
		Sub Total	62

² Inclusive of 21 Statistical Officers posted in the DSO's

SN	Activity	Agencies Involved	Manpower In Place
4	Labour and Employment Statistics	Department of Labour	5
		Sub Total	5
5	Forestry Statistics	Forest Department	1
		Sub Total	1
6	Transport Statistics	Transport Department	8
		Rajasthan Road Transport Corporation	0
		Sub Total	8
7	Statistics for Local Area Planning	Panchayati Raj Department	319
		Sub Total	319
Grand Total			694

Table 7.5: Sanctioned V/s filled up Total staff at DES Head Quarters and DSO's (As on 07-11-2006)

S.No.	Name of Post	State Head Quarter			District Statistical Offices		
		Sanctioned H.Q.	Number Working	Post Vacant	Sanctioned DSO's	Number Working	Post Vacant
1.	Director	1		1			
2.	Joint Director	3	3				
3.	Deputy Director	5	5				
4.	Assistant Director	5	3	2			
5.	Statistical Officer	4	3	1	32	21	11
6.	Analyst Cum Programmer	1		1			
7.	Programmer	1	1				
8.	Assistant Account Officer	1	1				
9.	Chief Legal Assistant	1	1				
10.	Office Superintendent	1	1				
11.	Office Assistant	8	8				
12.	UDC	17	16	1	08	06	2
13.	LDC	20	20		26	26	
14.	Sr. Personal Assistant	1	1				
15.	Personal Assistant	4	4				
16.	Stenographer	6	6				
17.	Steno-Typist	1	1				
18.	Accountant	1	1				
19.	Junior Accountant	2	2				
20.	Statistical Assistant	66(2)A ¹	66(2)A		98(3)A	94(3)A	4
21.	Statistical Inspector	17	17		79(3)A	51(3)A	28
22.	Computer	31(7)A	16(7)A	8	30(7)A	13(7)A	17
23.	Librarian	1		1			
24.	Assistant Librarian	1	1				

¹ A = Abeyance

S.No.	Name of Post	State Head Quarter			District Statistical Offices		
		Sanctioned H.Q.	Number Working	Post Vacant	Sanctioned DSO's	Number Working	Post Vacant
25.	Junior Artist	2	2				
26.	Jamadar	1	1				
27.	Class IV Worker	30	30		43	41	2
28.	Machine Operator	1	1				
	Total	233(9)	211((9)	15	316(13)	252(13)	64

Table 7.6: Department wise distribution of Statists and Economics Cadre Manpower – In Position

S.No.	Name of the Department/Office	Director	Joint Director	Deputy Director	Assistant Director	Statistical Officer	Total
1	Planning Department	3	1	8	4	7	23
2	Directorate of Economics & Statistics	1	3	4	4	4	16
3	Department of Agriculture Census	1	-	-	1	1	3
4	Department of Panchayati Raj	1	-	1	-	2	4
5	Department of Women & Child Development	-	1	-	-	-	1
6	Department of Irrigation	-	1	-	-	1	2
7	Finance Division	-	-	1	1	-	2
8	Social Welfare Department	-	-	1	-	1	2
9	DPIP	-	-	3	1	1	5
10	SC/ST Welfare Department (Udaipur)	-	-	2	1	-	3
11	SC/ST Welfare Department (Jaipur)	-	-	1	-	-	1
12	Chief Minister's Office	-	-	1	-	-	1
13	Ministry of Industries	-	-	1	1	-	2
14	Department of Commercial Taxes	-	-	1	-	-	1
15	S.N. Department	-	-	1	-	-	1
16	Department of Science & Technology	-	-	1	-	-	1
17	Rajasthan Health System Development Project	-	1	-	-	-	1
18	Department of Health Services	-	-	1	-	3	4
19	Department of Animal Husbandry	-	-	1	-	-	1
20	Irrigation Department	-	-	1	-	-	1
21	Education Department	-	-	1	-	-	1
22	Office of the Chief Planning Officer	-	-	15	-	1	16
23	KSA	-	-	3	-	-	3
24	Department of Cooperation	-	-	-	1	-	1
25	Commercial Taxes (Jaipur)	-	-	-	1	-	1
26	Department of Food & Civil Supplies	-	-	-	1	-	1
27	Department of Tourism	-	-	-	1	-	1
28	Department of Mines & Geology (Udaipur)	-	-	-	1	-	1
29	Transport Department	-	-	-	1	-	1
30	Disaster Management & Control (Jaipur)	-	-	-	1	1	2

S.No.	Name of the Department/Office	Director	Joint Director	Deputy Director	Assistant Director	Statistical Officer	Total
31	Department of Ayurveda	-	-	-	-	1	1
32	Directorate of Census (Jaipur)	1	-	1	-	1	3
33	Forest Department	-	-	-	-	1	1
34	District Statistical Office	-	-	-	-	21	21
35	RUIDP (Jaipur)	-	-	-	-	1	1
36	Department of Urban Development	-	-	-	-	1	1
37	Swarnajayanti Urban Employment Scheme	-	-	3	4	-	7
38	Economic Policy & Reform	-	-	1	-	1	2
39	ML Verma TRI (Udaipur)	-	-	1	-	-	1
40	Directorate of Continuing Education (Jaipur)	-	-	-	1	-	1
	Total	7	7	54	25	49	142

Table 7.7: Activity wise Distribution of Statistical Manpower – DES Head Quarters

Sl.No.	Activity	Statistical Assistant	Statistical Inspector	Computer	Total
1	Agriculture & TRS	9	0	2	11
2	Prices	4	0	2	6
3	ASI	3	0	1	4
4	State Income	11	4	0	15
5	Vital Statistics	10	1	2	13
6	Human Research and Coordination	11	0	4	15
7	NSS	12	4	0	16
8	DDP	0	3	2	5
9	Economic Census	2	3	0	5
10	Publication	1	0	0	1
11	Training	1	0	0	1
	Total	64	15	13	92

7.3 Optimum Manpower required by Activity

We have assessed the optimum manpower required for each of the twenty core statistical activities on the basis of our assessment of time inputs (man-days) required for data collection, transmission of raw data, validation, supervision, scrutiny, compilation, tabulation, analysis and report writing and dissemination of data.

The time inputs have been converted into staff numbers on the assumption that 240 man days of input are equivalent to one staff working full time for a year, this is a robust assumption and has been estimated as follows;

Table 7.8: Man-days available per employee per year

Sl No	Particulars	Calender Days
1	Weekends	78
2	Casual Leave	7
3	Paid Leave	30
4	Total Non Working Days	115
5	Total Calender days in a year	365
6	Total Working Days (Row 5-Row 4)	250
7	Training	10
	Net Working Days	240

7.3.1 Optimum Manpower Estimates for State Domestic Product, Capital formation & Savings, District Domestic Product, and Contribution of Local Bodies

The first four statistical activities viz, estimates for State Domestic Product, Capital formation, District Domestic Product, are grouped together for purposes of estimation of optimum manpower as, these activities are conducted by the State Income section and DDP sections of DES Rajasthan. The Major fiscal variables are worked out by the State Finance Department.

Additional man power is not recommended for this activity. The optimum manpower requirement for these activities is estimated at 24, the same as the staff in place. Details are given in table below:

Table 7.9: Estimation of Optimum Manpower requirement for State Income and related estimates

Designation	Optimum Required Mandays	Optimum Posts Staff No.	Available Manpower Mandays	Available Posts Staff No.	(Surplus)
Joint Director	240	1	240	1	-
Deputy Director	240	1	240	1	-
Assistant Director	240	1	240	1	-
Statistical Officer	240	1	240	1	-
Statistical Assistant	2,640	11	2,640	11	-
Statistical Inspector	1,680	7	1,680	7	-
Comp	480	2	480	2	-
Total	5,760	24	5,760	24	-

7.3.1.1 Assumptions underlying the estimation of optimum staff for State Income estimates are as follows:

Table 7.10: Assumptions underlying the estimation of optimum Man Days for SDP, DDP and GFCF, sub activity wise

Sl No	Sub Activity	Level of Staff	Estimated Man Days	Remarks/Basis of estimations
1	Data Collection	SA/SI	1920	Based on the experience of DES
2	Transmission	SA/SI	480	Collection of secondary data by DES
3	Scrutiny and Validation	JD/DD/AD/SOSA/SI	1740	Based on the experience of DES
4	Supervision	JD/DD/AD	180	20%-25% of total time invested
5	Compilation and Tabulation	JD/DD/AD/SO/SA/Comp	1260	Based on the experience of DES
6	Report Writing	JD/DD/AD	160	Man days consumed in reconciliation with CSO of 15 man days is factored in this sub activity./
7	Dissemination	JD	20	Based on the experience of DES
	Total		5760	

7.3.1.2 Facts, observations and recommendations used in the estimation of optimum manpower

1. The limitations inherent in the individual data series that provide inputs to SDP estimation affect the quality of SDP estimates. The data quality suffers because of use of old indices / ratios related to agriculture and allied fields - for example, old ratios / rates relating to agriculture and livestock is used in computation of SDP as these ratios are not updated by the State
2. The time lag in dissemination of estimates of SDP is as follows:
 - a. Quick Estimates – 12 months
 - b. Provisional Estimates – 24 months
 - c. Final Estimates – 36 months
3. Data quality of DDP suffers as (i) the required data for secondary and tertiary sectors are not available, which results in inadequate coverage; (ii) input values are not available district wise; (iii) for many sectors like animal husbandry and forestry the output is allocated - instead of this the data should be collected District wise for items like cost of repairs and maintenance, marketing charges, livestock feed etc.; and (iv) no DDP-specific training has been provided to any staff although they have been provided with CSO manuals detailing the methodology and all the related processes to be followed.
4. The quality of data of estimation of contribution from local bodies suffers due to three main reasons, among others. First, the accounting and bookkeeping systems of local bodies are poorly maintained, which adversely impacts on the quality of data provided by the local bodies to DSOs and DES. Second, data in respect of 85-90% of the local bodies is not captured given the extremely low response rate to requests for data. Third, expenditure of local bodies on outsourced services and activities is not provided by the local bodies to DSOs and DES.

Table 7.11: Distribution of Man days across sub activities, designation wise – State Income related activities

Designations	Distribution of Mandays							Percentage of Total	
	Data Collection	Transmission	Scrutiny and Validation	Supervision	Compilation and Tabulation	Report Writing	Dissemination		Total
Joint Director			60	60	60	40	20	240	
Deputy Director			60	60	60	60	0	240	4%
Assistant Director	-		60	60	60	60	-	240	4%
Statistical Officer	-		120	-	120	-	-	240	4%
Statistical Assistant	960	240	960	-	480	-	-	2,640	46%
Statistical Inspector	960	240	480					1,680	
Comp	-	-	-	-	480			480	
Total	1,920	480	1,740	180	1,260	160	20	5,760	100%
Percentage of Total	33%	8%	30%	3%	22%	3%	0.35%	100%	

7.3.2 Crop Area and Production Statistics

No additional manpower is recommended. The current in position manpower is estimated as optimum manpower required, details are given in table below;

Table 7.12: Estimation of optimum staff for Agriculture Statistics

Designation	Optimum Required Mandays	Optimum Posts Staff No.	Available Manpower Mandays	Available Posts Staff No.	Required Staff No.
Board of Revenue					
Joint Director	240	1	240	1	-
Assistant Director	240	1	240	1	-
Statistical Officer	240	1	240	1	-
Statistical Assistant	2,640	11	2,640	11	-
Computers	3,120	13	3,120	13	-
Sub Total	6,480	27	6,480	27	-
Department of Agriculture Census					
Director	240	1	240	1	-
Assistant Director	240	1	240	1	-
Statistical Officer	240	1	240	1	-
Sub Total	720	3	720	3	-
DES - Agriculture and TRS section					
Statistical Assistant	2,160	9	2,160	9	-
Computers	480	2	480	2	-
Sub Total	2,640	11	2,640	11	-
Grand Total	9,840	41	9,840	41	-

7.3.2.1 *Facts, observations and recommendations used in the estimation of optimum manpower*

Data quality is adequate and time lags are minimal and there is a time lag of 12 months in the release of final estimates

Table 7.13: Sub Activity wise distribution of Man Days for Agriculture Statistics

Designations	Distribution of Mandays							
	Data Collection	Transmission	Scrutiny and Validation	Supervision	Compilation and Tabulation	Report Writing	Dissemination	Total
Board of Revenue								
Joint Director	-	-	60	30	90	30	30	240
Assistant Director			60	30	90	30	30	240
Statistical Officer			60	30	90	30	30	240
Statistical Assistant	1,250	140	1,250					2,640
Computers	240	240	240		2,400			3,120
Sub Total	1,490	380	1,670	90	2,670	90	90	6,480
Department of Agriculture Census								
Director			60	30	90	30	30	240
Assistant Director			60	30	90	30	30	240
Statistical Officer	180		-	-	-	30	30	240
Sub Total	180	-	120	60	180	90	90	720
DES - Agriculture and TRS section								
Statistical Assistant	960		960	240				2,160
Computers					480			480
Sub Total	960	-	960	240	480	-	-	2,640
Total	2,630	380	2,750	390	3,330	180	180	9,840
Percentage of Total	27%	4%	28%	4%	34%	2%	2%	100%

7.3.3 Price Statistics

One Statistical Officer and one Statistical Inspector are recommended to assist the State in compilation of a CPI, the price collection mechanism of the DES is already in place, hence optimum has been estimated at 11 thus requiring an additional staff of 2. Details are given in table below:

Table 7.14: Estimation of optimum staff for Price Statistics

Designation	Optimum Required Mandays	Optimum Posts Staff No.	Available Manpower Mandays	Available Posts Staff No.	Required Staff No.
Deputy Director	240	1	240	1	-
Assistant Director	240	1	240	1	-
Statistical Officer	480	2	240	1	1
Statistical Assistant	960	4	960	4	-
Statistical Inspector	240	1	-	0	1
Computer	480	2	480	2	-
Grand Total	2,640	11	2,160	9	2

7.3.3.1 Facts, observations and recommendations used in the estimation of optimum manpower

1. WPI are being constructed for Rajasthan by DES and are released with minimal time lags
 - a. Compilation of CPI is not undertaken by DES. However, DES collects prices on a weekly basis from four markets at Jaipur, and from two markets each at Ajmer and Bhilwara. The collected prices are compiled on a monthly basis and forwarded to the Labour Bureau Shimla for estimation of CPI. The index is released on a monthly basis.

7.3.3.2 Estimation of number of visits to the markets for price collection:

It is recommended that a CPI be constructed for the state, and estimated number of visits to the markets for collection is estimated below.

Table 7.15: Estimated number of visits for price collection

SN	Price Category	Frequency of collection	Collection Centres	Number of visits in a year
1	Whole sale prices	Weekly	69 ³ centres	52*69 = 3588
2	Retail Prices	Weekly	32 centres	52*32= 1664
Total				5252

One visit consumes one day including travel time. Thus 5252 man days are required. This has been allocated for data collection activity for staff of the ranks of Statistical Investigators and Assistants. This norm was considered after taking geography, and connectivity into consideration.

³ Consisting of 47 Krishi Upaj Mandi Samities and 22 other centers

Table 7.16: Distribution of Man-days as per norms for Price Statistics Division

Designations	Distribution of Mandays							Total
	Data Collection	Transmission	Scrutiny and Validation	Supervision	Compilation and Tabulation	Report Writing	Dissemination	
Deputy Director	0	0	60	60	60	50	10	240
Assistant Director	0	0	60	0	120	60	0	240
Statistical Officer	240	-	120	120	-	-	-	480
Statistical Assistant	480	-	480	-	-	-	-	960
Statistical Inspector	-	-	-	-	240	-	-	240
Computer	-	-	-	-	480	-	-	480
Total	720	-	720	180	900	110	10	2,640
Percentage of Total	27%	0%	27%	7%	34%	4%	0%	100%

7.3.4 Health Statistics

Health and Family Welfare Statistics are disseminated with a time lag of six years and lack scrutiny and validation processes. Optimum manpower is estimated at 354. A total of 85 additional staff is recommended, two in the Directorate of Public Health and 83 in the Directorate of Family Welfare. The logic behind the additional staff recommended are as follows;

1. *Directorate of Public Health:* Two staff of the level of Computers are recommended to strengthen the data processing capacity of the Directorate
2. *Directorate of Family Welfare:* Two staff of the level of Computers are recommended to strengthen the data processing capacity of the Directorate
 - a. *District Level:* There are 32 district level offices in the State and is manned by an equal number of Computers and 11 SA's and one SI, the ideal norm of one Computer and one SA/SI is recommended to man the District level offices
 - b. *Block Level;* There are currently 182 Computers manning these Blocks level offices, however there are 237 block level offices this requiring an additional 55 Computers. Details are given in table below.

Table 7.17: Estimation of optimum staff for Health Statistics

Designation	Optimum Mandays Required	Optimum Manpower	Available Mandays	Available Manpower	Additional Manpower Required
Department of Women and Child Development					
Joint Director	240	1	240	1	-
Sub Total	240	1	240	1	-
Rajasthan Health Systems Development Project					
Joint Director	240	1	240	1	-
Sub Total	240	1	240	1	-
Department of Health Services					
Deputy Director	240	1	240	1	-
Statistical Officer	720	3	720	3	-
Sub Total	960	4	960	4	-
Department of Ayurveda					
Statistical Officer	240	1	240	1	-
Sub Total	240	1	240	1	-
Directorate of Public Health					
Statistical Officer	240	1	240	1	-
Statistical Officer	2,880	12	2,880	12	-
Statistical Inspector	480	2	480	2	-
Computer	960	4	480	2	2
Sub Total	4,560	19	4,080	17	2
Directorate of Family Welfare					
Assistant Director	240	1	-	-	1

Designation	Optimum Mandays Required	Optimum Manpower	Available Mandays	Available Manpower	Additional Manpower Required
DD/Demographer	240	1	240	1	-
Statistical Officer	480	2	480	2	-
Statistical Inspector	2,640	11	2,400	10	1
Computer	2,880	12	1,440	6	6
Sub Total	6,480	27	4,560	19	8
District Level Offices of the FW					
Statistical Assistant	2,640	11	2,640	11	-
Statistical Inspector	5,040	21	240	1	20
Computer	7,680	32	7,680	32	-
Sub Total	15,360	64	10,560	44	20
Block Level Offices - FW					
Computer	56,880	237	43,680	182	55
Sub Total	56,880	237	43,680	182	55
Total	84,960	354	64,560	269	85

7.3.4.1 Facts, observations and recommendations used in the estimation of optimum manpower:

1. The time lag in data dissemination is six years.
2. The data suffers due to poor response rate on many health parameters. Also, there are some exclusions, for example, medical practitioners in private sector and voluntary/non-government organizations are excluded from the list frame for data collection on morbidity, mortality, pre-natal and post-natal health care services. The data quality also suffers from the timeliness perspective given a time lag of 72 months, as a result of which, the statistical outputs related to performance of schemes/programmes are of limited use to policy makers. Also, the absence of benchmark surveys with respect to prevalence of diseases in the community limits the utility of data generated.

Table 7.18: Distribution of Man-days – Health Statistics

Designations	Distribution of Mandays							
	Data Collection	Transmission	Scrutiny and Validation	Supervision	Compilation and Tabulation	Report Writing	Dissemination	Total
Department of Women and Child Development								
Joint Director			-	60	60	90	30	240
Sub Total	0	0	0	60	60	90	30	240
Rajasthan Health Systems Development Project								
Joint Director				60	60	90	30	240
Sub Total	0	0	0	60	60	90	30	240
Department of Health Services								
Deputy Director				60	60	90	30	240
Statistical Officer	240		240		240			720
Sub Total	240	0	240	60	300	90	30	960
Department of Ayurveda								
Statistical Officer				60	60	90	30	240
Sub Total	0	0	0	60	60	90	30	240
Directorate of Public Health								
Statistical Officer				60	60	90	30	240
Statistical Officer	960		960	240	480	240		2,880
Statistical Inspector	480							480
Computer					960			960
Sub Total	1440	0	960	300	1500	330	30	4560
Directorate of Family Welfare								
Assistant Director				60	60	90	30	240
DD/Demographer				60	60	90	30	240

Designations	Distribution of Mandays							
	Data Collection	Transmission	Scrutiny and Validation	Supervision	Compilation and Tabulation	Report Writing	Dissemination	Total
Statistical Officer			240		240			480
Statistical Inspector	1200	240	1200					2,640
Computer					2,880			2,880
Sub Total	1,200	240	1,440	120	3,240	180	60	6,480
District Level Offices of the FW								
Statistical Assistant	4,800		4,800	1,440	2,400			13,440
Statistical Inspector	4,800		4,800	1,440	2,400			13,440
Computer					7,680			7,680
Sub Total	9,600	-	9,600	2,880	12,480	-	-	34,560
Block Level Offices - FW								
Computer	24,000	480	24,000		7,200			55,680
Sub Total	24,000	480	24,000	-	7,200	-	-	55,680
Grand Total	36,480	720	36,240	3,540	24,900	870	210	102,960
Percentage of Total	35%	1%	35%	3%	24%	1%	0%	100%

7.3.5 Educational Statistics

One Statistical Officer and one Computer is recommended for the Department of Primary Education, the Officer level staff is recommended to provide the guidance and leadership to a large team of 45 current staff and one Computer is recommended to strengthen the data processing capacity of the Department. Optimum manpower is estimated at 64 against in place staff of 62, details are given in table below:

Table 7.19: Estimation of Optimum Manpower for educational statistics

Designation	Optimum Mandays Required	Optimum Manpower	Available Mandays	Available Manpower	Additional Required Manpower
Directorate of Continuing Education					
Assistant Director	240	1	240	1	-
Total	240	1	240	1	-
Department of Secondary Education					
Deputy Director	240	1	240	1	-
Statistical Officer	240	1	240	1	-
Statistical Assistants	1,440	6	1,440	6	-
Computers	1,440	6	1,440	6	-
Statistical Inspectors	480	2	480	2	-
Sub Total	3,840	16	3,840	16	-
Department of Primary Education					
Statistical Officer	240	1	-	-	1
Statistical Assistant	720	3	720	3	-
Statistical Inspector	9,120	38	9,120	38	-
Computer	1,200	5	960	4	1
Sub Total	11,280	47	10,800	45	2
Grand Total	15,360	64	14,880	62	2

7.3.5.1 Facts, observations and recommendations used in the estimation of optimum manpower:

The time lags are as follows:

1. Literacy Data: 36 months after the Census
2. Institutional Data: 12 months
3. Enrolment Data: 12 months

The population census releases data regarding Literacy Rate and Adult Literacy Rate for state/ District level. Its coverage, reliability and accuracy is acceptable.

The quality of other data, like enrolment suffers on account of: (i) absence of a suitable data checking and validation mechanism; (ii) manual compilation of data at Block and District levels; (iii) institutional records (such as admission registers, attendance registers and stock

registers) are not properly maintained at the institutions, as a result of which correct information based on records cannot always be given; (iv) the tendency to give distorted information when it suits the school heads and the administrators; and (v) exclusion of private unaided institutions.

Table 7.20: Distribution of Man-days – Education and Literacy Statistics

Designations	Distribution of Mandays							
	Data Collection	Transmission	Scrutiny and Validation	Supervision	Compilation and Tabulation	Report Writing	Dissemination	Total
Directorate of Continuing Education								
Assistant Director			60	60	60	50	10	240
Sub Total	-	-	60	60	60	50	10	240
Department of Secondary Education								
Deputy Director			60	60	60	50	10	240
Statistical Officer			60	60	60	50	10	240
Statistical Assistants	720		720					1,440
Computers					1,440			1,440
Statistical Inspectors	480							480
Sub Total	1,200	-	840	120	1,560	100	20	3,840
Department of Primary Education								
Statistical Assistant	240	0	240	240	100	100	40	960
Statistical Inspector	7200	0	7200	0	1200	0	0	15600
Computer	0	0	0		1200			1200
Sub Total	7440	0	7440	240	2500	100	40	17760
Total	8,640	-	8,340	420	4,120	250	70	21,840
Percentage of Total	40%	0%	38%	2%	19%	1.14%	0.32%	100%

7.3.6 Labour and Employment Statistics

No additional Staff is recommended as none of the lacunae in the data as pointed out in the observations below can be rectified by additional manpower. The current in position manpower is estimated as optimum manpower required and no additional manpower is recommended.

Table 7.21: Estimation of Optimum Manpower – Labour and Employment Statistics

Designation	Optimum Required Mandays	Optimum Posts Staff No.	Available Manpower Mandays	Available Posts Staff No.	Required Staff No.
Department Of Labour					
Assistant Director	240	1	240	1	-
Statistical Inspector	240	1	240	1	-
Computer	720	3	720	3	-
Total	1,200	5	1,200	5	-

7.3.6.1 Facts, observations and recommendations used in the estimation of optimum manpower:

The data quality suffers in terms of adequacy, reliability and accuracy. This is due to (i) errors in the list frame of factories used by the Directorate of Industrial Safety and Health which includes a number of closed factories that cannot be deleted till they get de-registered, and exclusion of new factories as the list frame is not regularly updated; (ii) lack of completeness of the list frame of establishments with respect to collection of employment data from the organised sector- non inclusion of new factories (iii) non-response from establishments compulsorily required to render the employment returns; (iv) exclusion of private sector establishments employing 10 to 20 employees; and (v) delays in processing data on employment in the organised sector collected and compiled by the Directorate of Employment and Training.

Table 7.22: Distribution of man-days –Labour and Employment statistics

Labour and Employment Statistics								
Designations	Distribution of Mandays							
	Data Collection	Transmission	Scrutiny and Validation	Supervision	Compilation and Tabulation	Report Writing	Dissemination	Total
Department Of Labour								
Assistant Director			60	60	60	40	20	240
Statistical Inspector	-		60	60	60	40	20	240
Computer	240		240	-	240			720
Grand Total	240	-	360	120	360	80	40	1,200
Percentage of Total	20%	0%	30%	10%	30%	7%	3%	100%

7.3.7 Housing Statistics

Recommended tool for data collection for rural housing statistics is by adhoc surveys and no permanent manpower is estimated for the surveys

7.3.7.1 Facts, observations and recommendations used in the estimation of optimum manpower:

Urban statistics is adequate, however in case of rural housing statistics. Outside the Census framework, housing data is conspicuous by its absence. Besides, whatever little housing data is collected is of poor quality and not usable by policy makers.

7.3.8 Registration of Births and Death Statistics

A total of 21 additional posts are recommended in the DES, which is the Chief Registrar of Births and Deaths for the State. Six Computers in place of two and 14 Statistical Inspector in place of one are recommended to improve the quality of scrutiny and validation of the returns that are received from the DSO's. Optimum manpower is estimated at 37, for the purposes of Registration of Births and Deaths, details in table below

Table 7.23: Estimation of Optimum Manpower for Births and Death Statistics

Designation	Optimum Required Mandays	Optimum Posts Staff No.	Available Manpower Mandays	Available Posts Staff No.	Required Staff No.
Deputy Director	240	1	240	1	-
Assistant Director	240	1	240	1	-
Statistical Officer	240	1	240	1	-
Statistical Assistant	3,360	14	2,400	10	4
Statistical Inspector	3,360	14	240	1	13
Computer	1,440	6	480	2	4
Grand Total	8,880	37	3,840	16	21

7.3.8.1 Facts, observations and recommendations used in the estimation of optimum manpower

The quality of data on births and deaths suffers due to incomplete coverage by the Civil Registration System. The coverage under registration of births is below 40% and under deaths it is 40-60%. The recording efficiency, in terms of registrations as a percentage of SRS estimates, is low. The situation is better in urban areas as compared to rural areas. This is a result of several factors including a general lack of awareness in the public about the statutory requirements and procedures of registration lack of adequate numbers of birth and death certificates in rural areas, and high percentage of domiciliary deaths and births with the household becoming responsible for statutory reporting of events. To improve awareness about births and deaths registration, the District Statistical Offices, who are also the District Registrars, are taking at least one camp in urban areas to distribute Births & Death certificates to the households, who have got the event registered.

Further, while reliable estimates of birth and death rates, and infant mortality rates at the state level are obtained from the Sample Registration Scheme, district-wise vital rates are not available.

Another factor impacting adversely on quality of data on vital events is considerable delay in reporting of statistics from the local registrars that eventually delays the compilation of vital statistics at the State level. This delay is due to inordinately long time taken for intermediate tabulation at the district and town/municipality levels.

As concerns Medical Certification of Cause of Death (MCCD), the reports are not received regularly and from all indented hospitals. While some estimates of IMR are available from SRS, the only available estimate of MMR is from the 1998 Health and Family Welfare surveys. In the absence of completely reliable data on certified cause of deaths, estimation of maternal mortality rate is very difficult. The incidence of maternal mortality being low, deriving reliable sample estimates requires a very large sample size.

Table 7.24: Estimation of number of documents generated⁴

SN	Form	Details	Frequency	Applicable to	Number of Forms per Month	Total per year
1	Form 1	Birth Reports	Monthly	All Registration units	9189	110268
2	Form2	Death Reports	Monthly	All Registration units	9189	110268
3	Form 3	Still Births	Monthly	All Registration units	9189	110268
Total					27567⁵	330804⁶

Urban registration units have not been factored in the above analysis as the process of submission of returns by the Urban Registrars is well laid and does not suffer from resources.

⁴ MCCD forms have not estimated as they are event based.

⁵ One local registrar per village panchayat is estimated, there are 9189 village panchayats.

⁶ Non response rate is not included in the estimations.

Table 7.25: Distribution of Man-days for Optimum Manpower in Births and Death Statistics

Designations	Distribution of Mandays							Total
	Data Collection	Transmission	Scrutiny and Validation	Supervision	Compilation and Tabulation	Report Writing	Dissemination	
Deputy Director			60	60	60	50	10	240
Assistant Director			60	60	60	50	10	240
Statistical Officer			60	60	60	50	10	240
Statistical Assistant	1200		1200	0	960	0	0	3,360
Statistical Inspector	1200		1200	0	960	0	0	3,360
Computer	0		0	0	1440	0	0	1,440
Grand Total	2,400	-	2,580	180	3,540	150	30	8,880
Percentage of Total	27%	0%	29%	2%	40%	2%	0%	100%

7.3.9 Forestry Statistics

There is one Statistical Officer at the Forest Department, however in view of the time lags in the dissemination of data and data gaps observed, four additional posts of the rank of Computer are recommended and two posts of the rank of Statistical Assistants are recommended to increase the supervision of data collection efforts and increased scrutiny and validation of data. Details are given in table below

Table 7.26: Estimation of Optimum Manpower for Forestry Statistics

Designation	Optimum Mandays Required	Optimum Manpower	Available Mandays	Available Manpower	Additional Required Manpower
PCCF Level					
Statistical Officer	240	1	240	1	-
Statistical Assistants	480	2	-	0	2
Computer	960	4	-	0	4
Total	1,680	7	240	1	6

7.3.9.1 *Facts, observations and recommendations used in the estimation of optimum manpower*

1. The time lag in data dissemination is 18 months
2. The quality of forestry statistics suffers because of inadequate supervision of data collection operations at the Beat level, and manual data compilation and tabulation. Moreover, the full scrutiny and validation of the data at the Range and Circle levels is inadequate, which further accentuates the accuracy and reliability issues. There is also inadequate coverage as some relevant social forestry linked parameters like head loads of fire wood, wood used as cooking fuel, among others are excluded. However, the data related to the economic activities of the Department, for example, sale of minor produce, and timber are of adequate quality.
3. The Department is computerised fully with facilities for video conferencing and networking with the Conservator of Forests in the ranges. But no IT tool is used for statistical work, and compilation and tabulation of data is mostly done manually.

Table 7.27: Distribution of Mandays for Forest Statistics

Designations	Distribution of Mandays							
	Data Collection	Transmission	Scrutiny and Validation	Supervision	Compilation and Tabulation	Report Writing	Dissemination	Total
PCCF Level								
Statistical Officer			60	60	60	40	20	240
Statistical Assistants	480	-	240	240	240	120	120	1,440
Computer	480	-	240	-	240	-		960
Grand Total	960	-	540	300	540	160	140	2,640
Percentage of Total	36%	0%	20%	11%	20%	6%	5%	100%

7.3.10 Water Supply and Sanitation Statistics

There are no statistical personnel at the PHED however since the recommended tool for data collection is through adhoc surveys, no permanent staff are estimated for this activity.

7.3.10.1 Facts, observations and recommendations used in the estimation of optimum manpower:

The quality of data generated on drinking water and sanitation is inadequate in terms of adequacy, reliability and timeliness. This is due to limited scrutiny and supervision of village surveys through which data is collected; and delays in data availability caused by multiple layers through which the survey data is sent to the Department without significant value addition by the intervening functionaries – Assistant Engineer, divisional Executive Engineer and the Circle Superintending Engineer. The data is collected on an ad hoc basis and released with a time lag of 18 months.

7.3.11 Participation in NSSO Survey:

One officer of the rank of AD is recommended to improve the supervision aspect of the surveys while 4 additional Computers are recommended to increase the data processing speeds of the DES. Details in table below

Table 7.28: Estimation of Optimum Manpower – NSSO

Designation	Optimum Required Mandays	Optimum Posts Staff No.	Available Manpower Mandays	Available Posts Staff No.	Required Staff No.
Directorate Level					
Deputy Director	240	1	240	1	-
Assistant Director	240	1	-	0	1
Statistical Officer	240	1	240	1	-
Statistical Assistant	2,880	12	2,880	12	-
Statistical Inspector	960	4	960	4	-
Computer	960	4	-	0	4
Total	5,520	23	4,320	18	5

7.3.11.1 Facts, observations and recommendations used in the estimation of optimum manpower:

1. Sample size for the 62nd round was 448, 200 rural and 248 urban
2. Pooling of central and state sample is undertaken
3. Reports up to the 57th Round have been prepared. Data entry and validation of the 58th Round has been completed, data entry and validation of 59th Round is in progress.

Man days required for one FSU are estimated as follows, these estimations are inclusive of travel and other incidental time.

Table 7.29: Estimation of Man days required per FSU

S. N	Tasks	Staff	Location	Man Days
1	Demarcation and Preparation of list of households	SI	District	3.5
2	Canvassing of schedule for all four sub round	SI	District	6
3	Supervision of field surveys	SO	District	2
4	Supervision	SO	District	1
5	Scrutiny and Validation	SO/SA/SI	DES-HQ	2.6
	Scrutiny and Validation	AD	DES-HQ	1.9
6	Compilation and tabulation	DD	DES-HQ	1.9
7	Compilation and tabulation	Comp	DES-HQ	.50
	Total			19.4

Table 7.30: Estimation of Total Man days –DES Level

SN	Designation	Man days per FSU	FSU's	Total Man days
1	DD	1.9	448	240
2	AD	1.9	448	240
3	SO	1.9	448	240
4	SA	0.2	448	2880
5	SI	0.5	448	960
6	Computer	0.5	448	960
	Total	6.9		5520

For the activities of report writing and dissemination, norms are not based on FSU's but are determined by the experience of the consultants.

Table 7.31: Distribution of man days estimated for participation in NSSO surveys

Designations	Distribution of Man days							
	Data Collection	Transmission	Scrutiny and Validation	Supervision	Compilation and Tabulation	Report Writing	Dissemination	Total
Directorate Level								
Deputy Director			60	60	60	50	10	240
Assistant Director			60	60	60	50	10	240
Statistical Officer	-		240	-	-			240
Statistical Assistant	1,200		1,200		480	-		2880
Statistical Inspector	960							960
Computer					960			960
Total	2,160	-	1,560	120	1,560	100	20	5,520
Percentage of Total	39%	0%	28%	2%	28%	1.81%	0.36%	100%

7.3.12 Transport Statistics

A team of three, One SI and two Computers are recommended to strengthen the passenger statistics of RRTC, there are no staff in place currently. The current staff is assessed as optimum for the purposes of Transport Department, details in table below:

Table 7.32: Estimation of Optimum Manpower – Transport Statistics

Designation	Optimum Required Mandays	Optimum Posts Staff No.	Available Manpower Mandays	Available Posts Staff No.	Required Staff No.
Transport Department					
Assistant Director	240	1	240	1	-
Statistical Assistant	720	3	720	3	-
Computer	960	4	960	4	-
Sub Total	1,920	8	1,920	8	-
Rajasthan Road Transport Corporation					
Statistical Inspector	240	1	-	-	1
Computer	480	2	-	-	2
Sub Total	720	3	-	-	3
Total	2,640	11	1,920	8	3

7.3.12.1 Facts, observations and recommendations used in the estimation of optimum manpower:

A. Time lag in release of data

There is negligible time lag in respect of release of data relating to registration of vehicles. The time lag for release of data on road length is 4 months, and road accidents is 24 months, and that for passengers carried by MPRTC is also 24 months.

B. Quality

As concerns data on vehicle registration, driving licenses, revenue through taxes and fees, these are reliable and accurate. Road length statistics compiled by PWD and road accident statistics compiled by the Police Department are satisfactory. However, the data related to transport has inadequate coverage as no data is generated on several transport related parameters like transport of passengers by private sector transporters, goods transport, rental of commercial vehicles with operator, maintenance and repair of road transport equipment, supporting services for road transportation services, services auxiliary to all modes of transport, cargo-handling services, storage and warehouse services, among others.

Table 7.33: Distribution of man days Estimated for Participation in Transport Statistics

Designations	Distribution of Man days							
	Data Collection	Transmission	Scrutiny and Validation	Supervision	Compilation and Tabulation	Report Writing	Dissemination	Total
Transport Department								
Assistant Director			60	60	60	50	10	240
Statistical Assistant	240		240	-	240	-	-	720
Computer	480		-	-	480			960
Sub Total	720	-	300	60	780	50	10	1,920
Rajasthan Road Transport Corporation								
Statistical Inspector			60	60	60	50	10	240
Computer	240				240			480
Sub Total	240	-	60	60	300	50	10	720
Total	1,680	-	660	180	1,860	150	30	4,560
Percentage of Total	37%	0%	14%	4%	41%	3.29%	0.66%	100%

7.3.13 Industrial Statistics – ASI, IIP

There is a team of 18 in place at the Head quarter level of the DES, four additional Computers are recommended to strengthen the data processing activities and thereby reduce the time lags in the processing of data. One Officer of the rank of an AD is recommended to strengthen the supervision capacity of the Unit. Optimum manpower is estimated at 23, against in place of 18, details in table below

Table 7.34: Estimation of Optimum Manpower Requirement for Industrial Statistics-ASI, IIP

Designation	Optimum Required Mandays	Optimum Posts Staff No.	Available Manpower Mandays	Available Posts Staff No.	Required Staff No.
Directorate Level					
Deputy Director	240	1	240	1	-
Assistant Director	240	1	-		1
Statistical Officer	240	1	240	1	-
Statistical Assistant	2,880	12	2,880	12	-
Statistical Inspector	960	4	960	4	-
Computer	960	4	-	0	4
Grand Total	5,520	23	4,320	18	5

7.3.13.1 Facts, observations and recommendations used in the estimation of optimum manpower:

1. Time lag in data dissemination is 48 months.
2. Response rate is very poor

Table 7.35 Distribution of Optimum Mandays for Industrial Statistics

Designations	Distribution of Mandays							
	Data Collection	Transmission	Scrutiny and Validation	Supervision	Compilation and Tabulation	Report Writing	Dissemination	Total
Directorate Level								
Deputy Director			60	60	60	50	10	240
Assistant Director			60	60	60	50	10	240
Statistical Officer			60	60	60	60		240
Statistical Assistant	1,200	-	960	-	720	-	-	2,880
Statistical Inspector	480	-	240	-	120	120	-	960
Computer	480	-	240	-	240	-	-	960
Grand Total	2,160	-	1,620	180	1,260	280	20	5,520
Percentage of Total	39%	0%	29%	3%	23%	5.07%	0.36%	100%

7.3.14 Statistics for Local Area Planning;

No additional manpower is recommended. Current manpower in position is estimated at optimum, details in table below

Table 7.36: Estimation of Optimum Manpower for Statistics for Local Area Planning

Designation	Optimum Required Mandays	Optimum Posts Staff No.	Available Manpower Mandays	Available Posts Staff No.	Required Staff No.
Panchayati Raj Department - Planning Cell					
Head Quarters - Level					
Deputy Director	240	1	240	1	-
Statistical Officer	240	1	240	1	-
Statistical Assistant	480	2	480	2	-
Sub Total	960	4	960	4	-
District Level - Planning Cell					
Deputy Director	7,440	31	7,440	31	-
Statistical Assistant	14,160	59	14,160	59	-
Computers	3,360	14	3,360	14	-
Sub Total	24,960	104	24,960	104	-
Total - Planning Cell	25,920	108	25,920	108	-
Panchayati Raj Department - Statistical Cell					
Head Quarters - Level					
Statistical Officer	240	1	240	1	-
Statistical Assistant	720	3	720	3	-
Statistical Inspector	240	1	240	1	-
Computers	480	2	480	2	-
Sub Total	1,680	7	1,680	7	-
District Level - Statistical Cell					
Computers	7,440.0	31.0	7,440.0	31.0	-
Sub Total	7,440.0	31.0	7,440.0	31.0	-
Panchayat Samiti Level - Statistical Cell					
Statistical Assistant	41,520	173	41,520	173	-
Sub Total	41,520	173	41,520	173	-
Total - Statistical Cell	50,640	211	50,640	211	-
Total	76,560	319	76,560	319	-

7.3.13.1 *Facts, observations and recommendations used in the estimation of optimum manpower:*

Each Panchayat Samiti has been provided with a computer and plans are being made to transmit the data on line to the respective Chief Planning Officers. However, as of now, data compilation is and tabulation is done manually.

DPSO compiles district and block level statistics from secondary sources as mentioned above and publishes the District Statistical Book each year. There is a two year time lag in this publication. As of date the 2004 publication is available.

The time lag in data dissemination is 24 months.

Data quality is inadequate as district level disaggregated data is not available with respect to several parameters.

Table 7.37: Distribution of Man days for Statistics for Local Area Planning

Designations	Distribution of Man days							
	Data Collection	Transmission	Scrutiny and Validation	Supervision	Compilation and Tabulation	Report Writing	Dissemination	Total
Panchayati Raj Department - Planning Cell								
Head Quarters - Level								
Deputy Director			60	60	60	50	10	240
Statistical Officer			60	60	60	50	10	240
Statistical Assistant	240				240			480
Sub Total	240	0	120	120	360	100	20	960
District Level - Planning Cell								
Deputy Director			2400	2400	1200	1200	240	7440
Statistical Assistant	3600	960	3600		3600	2400		14160
Computers					3360			3360
Sub Total	3600	960	6000	2400	8160	3600	240	24960
Total Planning Cell	3840	960	6120	2520	8520	3700	260	25920
Panchayati Raj Department - Statistical Cell								
Head Quarters - Level								
Statistical Officer			60	60	60	50	10	240
Statistical Assistant	480		60	60	60	50	10	720
Statistical Inspector			60	60	60	50	10	240
Computers					480			480
Sub Total	480	-	180	180	660	150	30	1,680
District Level - Statistical Cell								
Computers	3,600	240			3,600			7,440
Sub Total	3,600	240	-	-	3,600	-	-	7,440

Designations	Distribution of Man days							
	Data Collection	Transmission	Scrutiny and Validation	Supervision	Compilation and Tabulation	Report Writing	Dissemination	Total
Panchayat Samiti Level - Statistical Cell								
Statistical Assistant	19,200	720	19,200		2,400			41,520
Sub Total	19,200	720	19,200	-	2,400	-	-	41,520
Total Statistical Cell	23,280.00	960.00	19,380.00	180.00	6,660.00	150.00	30.00	50,640.00
Total	27,120	1,920	25,500	2,700	15,180	3,850	290	76,560
Percentage of Total	35%	3%	33%	4%	20%	5.03%	0.38%	100%

7.4 Human Resource Gaps

7.4.1 AT DES and DSO's

The resource gaps in DES and DSO's are given in Table below.

Table 7. 38: Resource Gaps in DES

S.N	Activity	Staff	DES
1	Price Statistics	Statistical Officer	1
		Statistical Inspector	1
		Sub Total	2
2	RBD Statistics	Statistical Assistant	4
		Statistical Inspector	13
		Computer	4
		Sub Total	21
3	NSSO	Assistant Director	1
		Computer	4
		Sub Total	5
4	Industrial Statistics	Assistant Director	1
		Computer	4
		Sub Total	5
Grand Total			33

7.4.2 Line Departments

Table 7. 39: Resource Gaps in Line Departments

S.N	Activity	Staff	HQ	DSO	Blocks	Total
1	Health Statistics	Assistant Director	1	-	-	1
		Statistical Inspector	1	20	-	21
		Computer	8	-	55	63
		Sub Total	10	20	55	85
2	Education Statistics	Statistical Officer	1	-	-	1
		Computer	1	-	-	1
		Sub Total	2	-	-	2
3	Forestry Statistics	Statistical Assistant	2	-	-	2
		Computer	4	-	-	4
		Sub Total	6	-	-	6
4	Transport Statistics	Statistical Inspector	1	-	-	1
		Computer	2	-	-	2
		Sub Total	3	-	-	3
Grand Total			21	20	55	96

8. ASSESSMENT OF PHYSICAL INFRASTRUCTURE

8.1 Office Building for the DES Head Quarter

At present the head office of the DES is housed at Yojana Bhawan, Tilak Marg, Jaipur. This premise is adequate for the purposes of the Directorate in the short-term future.

8.2 Office Building for the DSO's

All the 32 District Statistical Offices are located in the Collectorate offices at the district headquarters. Though in terms of access to other District Level Organizations, the location is very good, but in terms of adequacy of the office space commensurate with the current and proposed activities of the DSO's they are inadequate. It is estimated that one DSO will require an average of 1850 square feet.

8.3 Vehicles

The State Head Quarters requires two vehicles and all the 32 DSO's have not been provided with a vehicle, whatever vehicles that are being used are old and not road worthy throughout the year. Thus a total of 34 vehicles will be required.

8.4 Office Automation Equipment

There is need for one photostat machine and one fax machine at the DES headquarters and in each of the 32 DSO's. Keeping in view the average temperatures of Rajasthan a water cooler is also recommended in each of the DSO's.

8.5 Power Back Up and Air-conditioning equipment

One self-starting generator and four air conditioners at the DES HQ and one air conditioner each for each of the 32 DSO's should be provided.

8.6 Estimated Costs

Summary of the costs for the improvements in the physical facilities is listed in table below

Table 8.1: Summary of Costs for Strengthening Physical Infrastructure

S.N	Particulars	Approx unit Cost Rs. Lakhs	Number of Offices/units	Amount in Rs. Lakhs
1	Building for DSO's	18.50	32	592.00
2	Vehicles	4.50	34	153.00
3	Photostat Machines	.80	34	27.20
4	Water Dispensers	.10	34	3.40
5	Self-Starting Generator	6.00	1	6.00
6	Air conditioners	0.25	36	9.00
7	Office furniture	.50	32	16.00
Total				806.6

9. PRIORITISATION OF STATISTICAL ACTIVITIES AND IMPACT

9.1 Prioritization Criteria

Any prioritization exercise has to be underpinned by well articulated criteria. The current status of prioritization of statistical activities in the state is inferred through resource allocation, using the difference between optimum manpower required and current staff in place in the state. The Consultant has chosen the criteria of (i) demand for statistical information; and (ii) current quality of statistical output. Using these criteria, we provide two options for prioritization of statistical activities. The rationale for using these criteria and the methodology of our assessment is discussed in this chapter. Prior to the discussion of the assessment of prioritization, the perspective of the State is presented.

9.2 Perspectives of the State

As perceived by DES and line departments of the State, all the twenty core statistical activities are important and of equal priority as the outputs of each of the twenty statistical activities are critical for both macro and micro management of the state's economy through information and knowledge-based policy making and deciding on policy shifts as required by performance of economic indicators measured through the twenty core statistical activities.

9.3 Assessment of Current Priorities

The above notwithstanding, it is our assessment that a *de facto* prioritization has been done by the DES and line departments while allocating the available manpower resources to the twenty core statistical activities. Thus, we can use the distribution of manpower resources across the twenty core activities as an indicator of priority. Activities not undertaken have been assigned the last priority. The current priorities of the State vis-à-vis statistical activities of the State using the indicator of difference between staff in place and optimum required are as reported in Table 9.1 below.

Table 9.1: Current Priorities of Statistical Activities – Staff Allocation Based Assessment

SN	Statistical Activity	Responsible Agency	Staff			Inferred Priority
			In Place IP	Optimum Required OR	100*(OR-IP)/OR	
1.	State Domestic Product Estimates	DES	24	24	0	1
2.	Estimate of Capital formation & Savings					
3.	Estimates of District Domestic Product					
4.	Estimates of the contribution of Local Bodies					

SN	Statistical Activity	Responsible Agency	Staff			Inferred Priority
			In Place IP	Optimum Required OR	100*(OR-IP)/OR	
5.	Data on major fiscal variables (Release of data on receipts, expenditures, and fiscal balance in relation to the budget estimates on monthly, quarterly or annual basis)	Department of Finance and DES				
6.	Industrial Statistics – ASI and IIP	ASI: CSO/NSSO/DES	18	23	22	4
7.	Price Statistics – Collection of Prices for WPI and CPI	IIP: DES	9	11	18	2
8.	Health, Morbidity and Family Welfare Statistics	Department of Health and Welfare	269	354	24	5
9.	Births and Deaths Registration Statistics	DES	16	37	57	6
10.	Participation in NSSO Surveys	DES/NSSO	18	23	22	3
11.	Crop Area and Production Statistics	DES/Board of Revenue	41	41	0	1
12.	Education and Literacy Statistics	Dept of Education	62	64	3	2
13.	Transport Statistics	Transport Dept, PWD, RRTC	8	11	27	5
14.	Forest	Forest Department	1	7	85	7
15.	Water and Sanitation ¹	PHED				
16.	Housing ²	Rajasthan Housing Board/DES				
17.	Labour and Employment	Labour Department	5	5	0	1
18.	Statistics for Local Area Planning	DPC/DES	319	319	0	1

As will be seen from this table, the current *inter se* priorities of statistical activities can be prioritized as follows:

Priority One

- State Income Statistics
 - a. State Domestic Product Estimates
 - b. Estimate of Capital formation & Savings
 - c. Estimates of District Domestic Product

¹ Optimum manpower not estimated as it is proposed to have water and sanitation statistics collected through periodic sample survey.

² Optimum manpower not estimated as it is proposed to have water and sanitation statistics collected through periodic sample survey.

- d. Estimates of the contribution of Local Bodies
- e. Data on major fiscal variables
- Crop Area and Production Statistics
- Labour and Employment
- Statistics for Local Area Planning

Priority Two

- Education and Literacy statistics

Priority Three:

- Participation in NSSO Surveys

Priority Four:

- Industrial Statistics

Priority Five:

- Health, Morbidity and Family Welfare Statistics

Priority Six:

- Births and Deaths Registration Statistics

Priority Seven:

- Forest Statistics

9.3.1 Demand-based Prioritization

Rationale: There is no gainsaying the fact that statistical information on economic (including agriculture and industry), social (health and education), urban development, and environment (forest, water supply and sanitation) is an essential requirement of policy makers and administrators in the state government for development planning, macro and micro management of the economy, and monitoring of several mission-oriented programmes. Equally important, such statistical information is required by the business community for developing and executing their business plans. And, demand for statistics also emanates from the research community and the multilateral donor agencies. Also, data on a number of parameters are required for monitoring progress vis-à-vis international programmes like the Millennium Development Goals to which India is a signatory. In view of the above, using demand for statistics as a basis for prioritization is justifiable.

Methodology: We have inferred the demand-based priorities on the basis of perceived demand (need) for statistics by policy makers, researchers and the business community. The demand (need) perceptions were derived from our consultations with select government officials and on the basis of our *a priori* understanding of need for data for both macro and micro management of the State's economy. The demand (need) for statistics has been categorized by us into high, medium, and low depending upon the criticality of statistics related to a given parameter for policy formulation, development planning, and macro and micro management of the State's economy.

The demand-based reprioritization has been done at three levels: high, medium, and low. Our suggestions are given in Table 9.2 Below:

Table 9.2: Demand Based Prioritisation of Statistical Activities

SN	Statistical Activity	Suggested Priority	Reason
1.	State Domestic Product Estimates	High	Critical parameters for macro management of the economy, and necessary inputs for development planning. Key indicator of growth. Perceived as early warning system for signaling policy shifts. Thus, high demand from planners, policy makers, IMF, World Bank, researchers.
2.	Estimate of Capital formation & Savings		
3.	Estimates of District Domestic Product		
4.	Estimates of the contribution of Local Bodies		
5.	Data on major fiscal parameters		
6.	Annual Survey of Industries	High	Important as it provides data on various vital aspects of registered factories for use in the estimation of national income, studies of industrial structure and policy formulation on important indicators like number of factories, employment, wages, invested capital, capital formation, input, output, value added etc.
7.	Index of Industrial Production	High	Important as a measure of changes over time in the volume of industrial production.
8.	Crop Area and Production Statistics	High	Critical for food security related policy formulations, which are particularly important for arid and semi-arid agricultural zones, and monitoring interventions for overall increase in agricultural output. Thus, data in high demand by the Rajasthan Government, national and agricultural research system including CGIR institutions, particularly ICRISAT that is devoted to research on agricultural productivity in semi-arid tropics.
9.	Compilation of Wholesale Price Index Numbers	High	It is a measure of inflation and also, an important input for SDP estimation.
10.	Compilation of Consumer Price Index Numbers	High	There is a high demand for CPI in indexation of prices and for wage revisions.
11.	Health, Morbidity and Family Welfare Statistics	High	Data required for monitoring of progress in Rajasthan towards its health goals and those of MDGs to which India is a signatory. A vital input for strategizing realization of health for all goals set by the State Government and GoI. Required for compliance with data requirements of WHO and implementation of Health Policy of GoI

SN	Statistical Activity	Suggested Priority	Reason
12.	Education and Literacy Statistics	High	Data required for monitoring of progress of investments made by Rajasthan to upgrade its education infrastructure. Also required for monitoring the State's progress towards MDGs to which India is a signatory. Requirements of regular monitoring of schemes and programmes directed at meeting the goals of universal education and hundred per cent literacy.
13.	Labour and Employment Statistics	High	Employment generation is one of the high priorities of both the national and state governments not only for sustainable livelihoods but to address other problems in the State, for example, emigration of agricultural labourers during periods of drought. For this, regular flow of data to policy makers at the State and Central Government levels is critical.
14.	Housing Statistics	High	In the context of high rate of urbanisation in the state, and the government's current emphasis on enforcing building bye-laws and land use management, housing statistics has registered a high demand. Also, housing statistics are required by urban and local bodies to develop appropriate infrastructure, to establish a data base for user charges, to ensure planned urban development through appropriate land use zoning, and to plan for the meeting the national goal of housing for all within a stipulated time period. The JNNURM initiative is another source of demand for housing statistics that is expected to grow.
15.	Birth and death registration and population.	High	Monitoring of progress towards MDGs to which India is a signatory. A vital input for strategizing realization of health for all goals set by the GoI. Required for compliance with data requirements of WHO
16.	Electricity production and distribution Statistics	Medium	The state is a power deficit State and is faced with issues of augmenting power supply. For this the State needs a sound plan and strategy for power enhancement. This requires data; while soon good data is available, more is required.
17.	Environment Statistics	High	Rajasthan is faced with several environmental problems related to desertification, for example, the rapidly depleting ground water table that may create drinking water crisis in the State. Both the State and Central Governments

SN	Statistical Activity	Suggested Priority	Reason
			have assigned a high priority to finding solutions to environmental impact of gradually increasing desertification of the State. This has led to a high demand for a comprehensive environmental database, which is most inadequate as of now.
18.	Water and Sanitation	High	Rapidly growing demand for water and sanitation statistics by the Government of Rajasthan, GoI, and multilateral agencies arising from serious water shortage in the State, and water sector reform initiatives.
19.	Participation in the surveys of National Sample Survey Organisation (NSSO).	High	NSS surveys meet the demand for disaggregated data with respect to policy formulation and analysis of several schemes under implementation for socio economic development, and for local level planning.
20.	Transport	High	A well planned transport system is a vital necessity given the mushrooming growth of vehicles and the rising population in the main cities of Rajasthan. This warrants a comprehensive transport database covering all modes of transport, and the transport planners of the State have registered a high demand for a quality transport database.

Grouping of statistical activities in high, medium, and low demand-based priority categories is given in Tables 9.3 below.

Table 9.3: Demand Based Prioritisation of Statistical Activities by High, Medium, and Low Priority Categories

SN	High Priority	Medium Priority	Low Priority
1.	State Domestic Product Estimates	Electricity production and distribution Statistics	
2.	Estimate of Capital formation & Savings		
3.	Estimates of District Domestic Product		
4.	Estimates of the contribution of Local Bodies		
5.	Data on major fiscal variables		
6.	Industrial Statistics; ASI, IIP		
7.	Crop Area and Production Statistics		
8.	Compilation of Wholesale Price Index Numbers		
9.	Compilation of Consumer Price Index Numbers		
10.	Health, Morbidity and Family Welfare Statistics		
11.	Education and Literacy Statistics (Adult literacy rate and Enrolment ratio in primary education by sex)		
12.	Labour and Employment Statistics		

SN	High Priority	Medium Priority	Low Priority
13.	Housing (Housing stock, additions and investment in housing).		
14.	Birth and death registration and population.		
15.	Environment Statistics.		
16.	Water and Sanitation		
17.	Participation in the surveys of National Sample Survey Organisation (NSSO).		
18.	Transport Statistics		

9.3.2 Quality Driven Prioritisation

Rationale: The rationale for quality-based prioritisation is derived from the imperatives of strengthening the overall statistical system of the state through efficient allocation of incremental resources with the caveat that the already high quality statistical activities are not deprived of their resource requirements i.e. low and medium quality statistical activities should not be strengthened at the cost of high quality activities. The emphasis is on strengthening the statistical system as a whole rather than individual statistical activity – holistic rather than the Cartesian partial approach.

Methodology: The quality-based prioritization has been done on the basis of quality assessment of statistical activities using a methodology based on IMF DQAF that has been discussed in 4.2. The quality of statistical output has been assessed on a normative scale of high, medium, and low. After this we have prioritized the statistical activities by assigning high priority to low quality statistical activities. .

Our results are given in Tables 9.4 and 9.5 below:

As will be seen from Chapter 4, the quality of statistical activities can be grouped into high, medium and low as given in Table 9.4 below.

Table 9.4: Quality of Statistical Activities

STATISTICAL ACTIVITY			
SN	High Quality	Medium Quality	Low Quality
1.	Data on major fiscal variables	State Domestic Product Estimates	Capital Formation and Savings Estimates
2.	Electricity Production and Distribution	Compilation of IIP	DDP Statistics
3.	Transport Statistics: Vehicle Registration and Road Length Statistics	ASI	Estimates of Contribution of local bodies
4.		Crop Area and Production Estimates	Education: Institutional Statistics Enrollment Statistics
5.		Compilation of WPI	Health, Morbidity and Family Welfare Statistics
6.			Labour Statistics and Employment Statistics
7.			Housing Statistics

STATISTICAL ACTIVITY			
SN	High Quality	Medium Quality	Low Quality
8.			Transport: Passenger Traffic Statistics and Statistics on road accidents
9.			Birth and Death Registration Statistics
10.			Forestry Statistics and Water Supply Statistics
11.			Statistics for local area planning.

As our analysis reveals, three of the statistical activities undertaken by the State's Statistical System are of high quality. Thus in terms of improving quality of statistical output these activities command a low priority. Likewise, the statistical output with low quality should be assigned high priority. The prioritisation of statistical activities from the view of improving quality is given in Table 9.5 below.

Table 9.5: Quality Improvement Driven Prioritisation

STATISTICAL ACTIVITY			
SN	High Priority	Medium Priority	Low Priority
1.	Capital Formation and Savings Estimates	State Domestic Product Estimates	Data on major fiscal variables
2.	DDP Statistics	Compilation of IIP	Electricity Production and Distribution
3.	Estimates of Contribution of local bodies	ASI	Transport Statistics: Vehicle Registration and Road Length Statistics
4.	Education: Institutional Statistics Enrollment Statistics	Crop Area and Production Estimates	
5.	Health, Morbidity and Family Welfare Statistics	Compilation of WPI	
6.	Labour Statistics and Employment Statistics		
7.	Housing Statistics		
8.	Transport: Passenger Traffic Statistics and Statistics on road accidents		
9.	Birth and Death Registration Statistics		
10.	Forestry Statistics and Water Supply Statistics		
11.	Statistics for local area planning.		

9.4 Undertaking New Activities for Strengthening the Statistical System

The following new activities are suggested. These activities are important not only from the perspective of enriching the coverage and quality of GSDP estimates, but also in terms of generating critical data for macro management of the State's economy, as well as formulation of progressive socio-economic policies.

9.4.1 Type Studies

DES should undertake type studies to update the rates and ratios used for estimation of GSDP, DDP and other income statistics.

9.4.2 Poverty Statistics

The World Bank has advocated the need for developing a comprehensive statistical system for generating poverty statistics to provide the required data for both national and international interventions for poverty reduction and promoting sustainable livelihoods. Thus, an important aspect of data collection and analysis in Rajasthan should be the ability of the statistical system to generate information pertaining to people below the poverty line. The guidelines for poverty statistics developed by the UN Special Project on Poverty Statistics should be considered for adoption for developing a framework and methodology for poverty statistics.³

9.4.3 Environmental Statistics

Rajasthan is faced with several environmental problems related to desertification, for example, the rapidly depleting ground water table that may create drinking water crisis in the State. Both the State and Central Governments have assigned a high priority to finding solutions to environmental impact of gradually increasing desertification of the State. This has led to a high demand for a comprehensive environmental database, which is most inadequate as of now. DES should undertake this activity and develop a sound environmental statistical base by creating a database based on the needs of the policy makers, the environment activists, and the international community. The database should address the environmental statistical requirements arising from the need for environmental decisions on the following, among others:

1. Air quality – outdoor and indoor
2. Ozone Layer Protection
3. Noise
4. Waste
5. Water
6. EA & Planning
7. Strategic Environmental Assessment
8. Conservation
9. Energy Efficiency and Conservation
10. Renewable Energy

³ Handbook on Poverty Statistics: Concepts, Methods and Policy Use, Special Project on Poverty Statistics, United Nations Statistics Division, December 2005

11. Environmental monitoring

9.4.4 Gender Statistics

The current decade has witnessed some very important developments in the women's onward march towards equality with men. During last couple of years, the focus has decisively shifted from welfare of women to empowerment of women, which has been recognized as the key factor for bringing about improvements in the status of women. To reflect the status of women in the contemporary Indian society and its concern towards their emancipation, monitoring of various socio-economic indicators, which are integral to the empowerment of women, has assumed greater significance. Thus, gender statistics are beginning to emerge as an important factor in social statistics triggered by the emphasis placed on gender issues by the Government, and the plan to mainstream women with the development process. This has led to high demand for gender statistics⁴.

The production of gender statistics will require DES to adequately formulate the concepts and methods for data collection so as to reflect the existing gender concerns and differentials and take into consideration social and cultural factors that can produce gender-based biases in data collection, analysis, and presentation.

9.4.5 Tourism Statistics

A detailed database on tourism is required to facilitate development of new and innovative tourism products and formulation of required strategy and plan. While data is available on tourist arrivals, there is inadequate data on tourists' expenses, employment generated in the tourism sector, and tourist profiles by origin and sex, among other parameters. DES should initiate activities to bridge these data gaps.

9.4.6 Service Sector Statistics

The services sector is growing rapidly in Rajasthan and is contributing significantly to State's income. It is, therefore, important to factor in the service sector's income in estimation of State Income Statistics. DES should take the initiative in structuring a structure, system and action plan for collection and compilation of service sector statistics.

9.4.7 Compilation of CPI

The compilation of Consumer Price Index should be undertaken as there is a high demand for CPI in indexation of prices and for wage revisions.

⁴ DES Rajasthan has recognised the importance of gender statistics and keeping in view felt need of planners and policy makers, it has brought out the publication "Women and Men in Rajasthan - 1999". The publication contains time series data on a large number of indicators covering various facts of development aspects of women in the state. It includes rights & privileges of women population, health, family planning, economic status, education, decision making, employment, crimes etc.

9.5 Activities to be undertaken with Less Frequency

Data collection and compilation of housing, and water and sanitation statistics should be undertaken biennially through surveys, rather than the annual frequency of data collection.

9.6 Activities to be Dropped or Outsourced

Printing of publications should be outsourced to ensure timely and quality publications. The current practice of printing publications by government press is causing inordinate delays in data dissemination.

9.7 Likely Impact of Recommendations

The above suggestions will require additional funds (i) for filling the data gaps as discussed in Chapter 4, (ii) providing additional manpower resources as estimated in Chapter 7, (iii) strengthening the IT infrastructure as discussed in Chapter 6, and (iv) upgrading the physical facilities of DES as discussed in Chapter 8. The overall likely impact of recommendations is given in the table below:

Table 9.6: Likely Impact of Recommendations

S.N	Statistical Activity	Recommended Manpower	Recommended IT Resources	Likely Improvements
		Additional	Additional	
		Yes(√)/ No(X)	Yes(√)/ No(X)	
1.	State Domestic Product Estimates	X	√	<ul style="list-style-type: none"> Improvement in data quality due to use of latest rates and ratios and reduction in the time lag in release of data. Proposed new activities related to estimation of Capital Formation and Savings, DDP, Contribution of Local Bodies that were hitherto not taken will enhance the quality of state income statistics
2.	Estimate of Capital formation & Savings			
3.	Estimates of District Domestic Product			
4.	Estimates of the contribution of Local Bodies			
5.	Annual Survey of Industries: Analysis of State Sample Data	√	√	<ul style="list-style-type: none"> Improvements in data on various vital aspects of registered factories for use in the estimation of national income, studies of industrial structure and policy formulation on important indicators like number of factories, employment, wages, invested capital, capital formation, input, output, value added etc.
6.	Index of Industrial Production	√	√	<ul style="list-style-type: none"> Availability of IIP that will provide inputs for monitoring of industrial growth and facilitate development of growth-friendly industrial policy.

S.No	Statistical Activity	Recommended Manpower	Recommended IT Resources	Likely Improvements
		Additional	Additional	
		Yes(√)/ No(X)	Yes(√)/ No(X)	
7.	Crop Area and Production Statistics	x	√	<ul style="list-style-type: none"> Improvement in area and yield estimates with reduction in compilation error and reduction in time lag for release of data from the present 24 months.
8.	Compilation of Wholesale Price Index Numbers	√	√	<ul style="list-style-type: none"> This proposed new activity will provide a measure for inflation that will be used for macro and micro management of the state's economy.
9.	Compilation of Consumer Price Index Numbers	√	√	<ul style="list-style-type: none"> This proposed new activity will enable the state in indexation of prices and for wage revisions.
10.	Health, Morbidity and Family Welfare Statistics	√	√	<ul style="list-style-type: none"> Enhanced coverage, improved data quality through adequate scrutiny and validation and reduction in time lag.
11.	Education and Literacy Statistics	√	√	<ul style="list-style-type: none"> Improved quality of data through enhanced coverage, improved scrutiny and validation and reduced time lag.
12.	Labour and Employment Statistics	X	√	<ul style="list-style-type: none"> Improvement in data quality in terms of coverage, accuracy and adequacy of labour and employment data.⁵
13.	Birth and Death Registration Statistics.	√	√	<ul style="list-style-type: none"> Improved coverage of rural areas, monitoring and inspection and reduced time lag.
14.	Forestry Statistics.	√	√	<ul style="list-style-type: none"> Improvement in validation and scrutiny of data, increased coverage and reduction of time lag
15.	Participation in the surveys of National Sample Survey Organisation (NSSO).	√	√	<ul style="list-style-type: none"> Commencement of tabulation of state sample and improvement in supervision of field work
16.	Transport	√	x	<ul style="list-style-type: none"> Improvement in coverage of transport data
17.	Statistics for Local Area Planning	x	√	<ul style="list-style-type: none"> Improvement in the availability of data

⁵ No labour data other than list of trade unions in the state is being maintained.

10. SUMMARY OF FINDINGS AND RECOMMENDATIONS

The key findings of our assessment of Rajasthan's statistical system with respect to statistical activities *per se*, available and required manpower, IT and physical infrastructure resources, and management/organization, discussed in the foregoing chapters, are summarized below. This is followed by our recommendations arising from our findings.

10.1 Findings - Statistical Activities

10.1.1 Status of Statistical Activities

This is given in Table 10.1 below:

Table 10.1: Status of Statistical Activities in Rajasthan

SN	Activity	Agency/ Department Responsible	Base Year where applicable	Frequency of data collection	Periodicity of release of estimates	Year ¹ for which Data Available as of June 2006	Time Lag in Data Disseminati on in Months
1	State Domestic product	DES	1993 - 94	Annual	Annual	FY2002-03	12-quick 24- provisional 36-Revised
2	Capital formation	DES	N.A.	Annual	Annual	Dept.: FY2003 – 04 NDCU – 1999- - 2000	Dept – 24 NDCU - 60
3	District Domestic Product	DES	N.A.	Annual	Annual	FY 2002- 03	36
4	Contribution of Local Bodies	DES	1993 - 94	Annual	Annual	FY 2002-03	12-quick 24- provisional 36-Revised
5	Major fiscal data	Finance Dept. and DES	N.A.	Monthly	Annual	FY 2005 - 06	<1
6	Annual Survey of Industries	CSO/NSSO/ DES	N.A.	Annual	Annual	FY 2001- 02	48
7	IIP	DES	1993-94 ²	Monthly	Monthly	March 2006	3
8	Crop area and production statistics	DES/Board of Revenue	N.A.	Annual	Annual	Area AY2004-05 Production- AY 2004- 03	Area-12 Production- 12
9	Wholesale Price Index	DES	1999-2000	Monthly	Monthly	January 2006	6
10	Consumer Price Index	Not compiled by the State DES					
11	Health, Morbidity, Mortality and family welfare statistics	Department of Health and	N.A.	Annual	Annual	CY 1999	72

¹ FY – Fiscal Year ending March; CY-Calendar year ending December; AY – Agriculture Year ending June; EY – Education Year ending September

² Being revised to 1999-2000

SN	Activity	Agency/ Department Responsible	Base Year where applicable	Frequency of data collection	Periodicity of release of estimates	Year for which Data Available as of June 2006	Time Lag in Data Disseminati on in Months
		Family Welfare					
12	Education and Literacy Statistics						
12 A	Institutional	Department of Education	N.A.	Annual	Annual	EY 2003- 04	12
12B	Enrolment Data	Department of Education	N.A.	Annual	Annual	EY 2003- 04	12
13	Labour and Employment Statistics						
13 A	Labour Statistics	Labour Commissioner	N.A.	Annual	Annual	CY 2001	48
13 B	Employment Statistics	Directorate of Employment & Training	N.A.	Annual	Annual	FY 2002 - 03	24
14.	Housing Statistics	Population Census/ Rajasthan Housing Board	N.A.	Decennial	Decennial	2001	36 months after Pop Census
15	Birth and Death Registration Statistics	DES	N.A.	Monthly / Annual	Annual	CRS: CY1999 SRS: CY2004 MCCD: CY1999	72: CRS 24: SRS 72: MCCD
16	Electricity Production and Distribution Statistics	Department of Power	N.A.	Prod – Daily Distributio n-Monthly	Annual	FY 2004- 05	12
17	Environmental Statistics						
17.A	Forestry Statistics	Conservator of Forest	N.A.	Annual	Annual	FY 2004- 05	18
17.B	Water Supply and Sanitation Statistics	PHED	N.A.	Annual	Annual	FY 2004- 05	12
18	Participation in National Sample Survey	DES/NSSO	N.A.	Annual	Annual	No tabulation done for several years	
19	Transport Statistics						
19.A	Motor Vehicle Registration	Transport Commissioner	N.A.	Monthly / Annual	Annual	May 2006	<1
19.B	Road Length	State PWD	N.A.	Annual	Annual	FY 2005- 06	4
19.C	Road Accidents	Police Department	N.A.	Annual	Annual	CY 2004	12
19.D	Passenger and Goods Traffic	Passenger – RRTC	N.A. Not done	Annual	Annual	FY 2003- 04	24
20	Statistics for Local Area Planning	DPC/DES	N.A.	Annual	Annual	FY 2002- 03	24

10.1.2 Data Gaps

The principal data gaps are given in the Table below:

Table 10.2: Principal Data Gaps

SN	Statistical Parameter	Data Gaps
1.	GSDP Estimates:	Data gaps with respect to estimation of GSDP are several including: consumer price index; statistics on bye-products of agricultural and livestock products; index of agricultural production; expenditure data on new constructions and repairs of residential buildings; transportation of own products of ancillary activities ³ .
2.	Estimate of Capital formation & Savings	Savings are not estimated and data on actual addition to fixed assets not available; it is available only for gross assets, which do not satisfy the definition. The data provided by organizations engaged in mining, construction, and cooperatives are not comprehensive. Further, database required for physical and financial indicators in many sub-sectors is inadequate, which makes it difficult to use benchmark figures. In a number of cases, data on type of assets is not available, so estimates by type of assets cannot be attempted for the supra regional and private sectors. Latest data in some of the sectors is not available as a result of which data has to be moved with the help of some suitable indicators.
3.	Contribution of Local Bodies	Expenditure of local bodies on outsourced services and activities is not provided by the Local Bodies to DES.
4.	Compilation of Consumer Price Index Numbers	Not compiled
5.	Health, Morbidity and Family Welfare Statistics.	Data is not available on percentage of children fully immunized.
6.	Education and Literacy Statistics	For literacy rates and adult literacy rates, the source is decadal population census. For intermittent years the rates are not available for the State.
7.	Labour and Employment Statistics.	Employment Statistics: Employment data is not available in respect of agriculture and allied occupations in the private sector, and household establishments.
8.	Housing Statistics	Construction activities with respect to rural and semi rural areas are not captured in housing statistics.
9.	Forestry Statistics.	Forestry Statistics: Inadequate data on forest regeneration, social forestry, and consumption/sale of forest produce.
10.	Transport Statistics	No data is generated on several transport related parameters like transport of passengers by private sector transporters, rental of commercial vehicles with operator, maintenance and repair of road transport equipment, supporting services for road transportation services, services auxiliary to all modes of transport, cargo-handling services, storage and warehouse services, among others.

³ Data on unregistered manufacturing sector, agriculture sector, and livestock is available every five years from quinquennial surveys.

10.1.3 Challenges and Problems

Some of the key challenges and problems are indicated in Table 10.3 below:

Table 10.3: Challenges and Problems

CHALLENGE	PROBLEM
Disconnect between data need and resources	<ul style="list-style-type: none"> • Rajasthan's statistical system does not have adequate human and financial resources to respond to meet users' increasing needs, for example, environmental, poverty and gender statistics. • Rajasthan's statistical system does not have adequately trained staff. • DSOs have no IT resources
Disconnect between statistical system and information technology	<ul style="list-style-type: none"> • Inadequate IT systems, particularly in DSOs • Inadequate computer operators • Inadequate IT skills • Inadequate networking and connectivity
Inadequate coordination between DES, line departments, and other agencies of GoI	<ul style="list-style-type: none"> • Response of line departments to request for data by DES is inadequate

The above challenges warrant a rationalization of the current work program through consolidation and harmonization of surveys and data reporting; the adoption and enforcement of unified concepts, standards and methods; greater use of sampling and effective application of IT; and in-service training.

10.1.4 Data Quality

Our assessment of quality is based on the IMF Data Quality Assessment Framework explained in Chapter 4. The results of our quality assessment are given in Table 10.4 below; details can be seen in Table 4.15 in Chapter 4. The distribution of the twenty core statistical activities in high, medium, and low categories of quality is as given in Table 10.4 below:

Table 10.4: Quality of Statistical Activities

STATISTICAL ACTIVITY			
SN	High Quality	Medium Quality	Low Quality
1.	Data on major fiscal variables	State Domestic Product Estimates	Capital Formation and Savings Estimates
2.	Electricity Production and Distribution	Compilation of IIP	DDP Statistics
3.	Transport Statistics: Vehicle Registration and Road Length Statistics	ASI	Estimates of Contribution of local bodies
4.		Crop Area and Production Estimates	Education: Institutional Statistics Enrollment Statistics
5.		Compilation of WPI	Health, Morbidity and Family Welfare Statistics
6.			Labour Statistics and Employment Statistics
7.			Housing Statistics

STATISTICAL ACTIVITY			
SN	High Quality	Medium Quality	Low Quality
8.			Transport: Passenger Traffic Statistics and Statistics on road accidents
9.			Birth and Death Registration Statistics
10.			Forestry Statistics and Water Supply Statistics
11.			
12.			Statistics for local area planning.

The data quality can be improved by addressing their key weaknesses by:

1. Ensuring that source data are obtained from comprehensive data collection programmes and are timely
2. Routine assessment of source data for coverage, non response error, sample and non sampling errors
3. Validation of intermediate results including validation against other information as applicable
4. Assessment of intermediate data in terms of statistical discrepancies.
5. Strengthening supervision, compilation, scrutiny, and validation processes
6. Establishing and adhering to data dissemination standards
7. Ensuring that periodicity and timeliness follow dissemination standards as established in consultation with CSO
8. Ensuring that timeliness follows established standards.

10.1.5 Inadequate Skills

Yet another challenge relates to inadequately qualified statistical staff. As discussed elsewhere in this report, most of the current statistical staff is deficient in statistical skills both at the operational level – methods of data collection, processing and summarisation – and statistical methods to improve the practice of statistics, that is, use of “applicable theoretical techniques”. The latter deficiency is of particular concern as the statistical staff is not fully conversant with “applicable theoretical techniques”. Further, the DES staff does not have adequate capabilities to tabulate data on demand and to analyse data from different sources. Our recommendations for skills development are discussed in 10.3.8 of this chapter.

10.1.6 Available and Required Manpower

- Total available manpower is 823 at the DES and Line Departments
- Total Estimated optimum manpower is 952
- Total additional required manpower is 129
- Activities with resource gaps are Health and Family Welfare Statistics and Education and Literacy Statistics
- Activities for which no staff are assessed are recommended are housing statistics,

water and sanitation Statistics.⁴

- Activities with surplus staff are none.

Table 10.5: Overview of Available and Optimum Required Staff for Statistical Activities in DES, and DSOs

SN	Activity	Available Staff	Optimum Requirement	Staff Resource Gap
1.	SDP, DDP, CF&S, C of LB's	24	24	0
2.	Industrial Statistics – ASI, IIP	18	23	5
3.	Crop Area and Production statistics	41	41	0
4.	Price Statistics – WPI and CPI	9	11	2
5.	Health, Family Welfare	269	354	85
6.	Education and Literacy Statistics	62	64	2
7.	Labour and Employment	5	5	0
8.	Housing Statistics	0	0	0
9.	Registration of Births and Deaths	16	37	21
10.	Forestry	1	7	6
11.	Water and Sanitation Department	0	0	0
12.	Participation of NSSO Surveys	18	23	5
13.	Transport Statistics	8	11	3
14.	Statistics for Local Area Planning	319	319	0
15.	Staff posted across activities	33	33	0
Total		823	952	129

10.1.7 Available Manpower Resources⁵

Table 10.6: Statistical Manpower in DES and in Line Departments

SN	Location	Staff Numbers
1.	Directorate of Economics & Statistics	129
2.	Line Departments	694
Total		823

Table 10.7: Statistical Manpower in Place at the DES and DESO's

SN	Designation	Manpower In Place
1	Director	1
2	Joint Director	3
3	Deputy Director	4
4	Assistant Director	4
5	Statistical Officer	25 ⁶
6	Statistical Assistant	64
7	Statistical Inspector	15
8	Computer	13
Total		129

⁴ The recommended mode of data collection in case of Housing and Water and Sanitation statistics is adhoc sample surveys

⁵ The data on staff is as on 7th November 2006.

⁶ Inclusive of 21 Statistical Officers posted in the DSO's

Table 10.8: Sanctioned V/s filled up Total staff at DES Head Quarters and DSO's

S.No.	Name of Post	State Head Quarter			District Statistical Offices		
		Sanctioned H.Q.	Number Working	Post Vacant	Sanctioned DSO's	Number Working	Post Vacant
1.	Director	1		1			
2.	Joint Director	3	3				
3.	Deputy Director	5	5				
4.	Assistant Director	5	3	2			
5.	Statistical Officer	4	3	1	32	21	11
6.	Analyst Cum Programmer	1		1			
7.	Programmer	1	1				
8.	Assistant Account Officer	1	1				
9.	Chief Legal Assistant	1	1				
10.	Office Superintendent	1	1				
11.	Office Assistant	8	8				
12.	UDC	17	16	1	08	06	2
13.	LDC	20	20		26	26	
14.	Sr. Personal Assistant	1	1				
15.	Personal Assistant	4	4				
16.	Stenographer	6	6				
17.	Steno-Typist	1	1				
18.	Accountant	1	1				
19.	Junior Accountant	2	2				
20.	Statistical Assistant	66(2)A ¹	66(2)A		98(3)A	94(3)A	4
21.	Statistical Inspector	17	17		79(3)A	51(3)A	28
22.	Computer	31(7)A	16(7)A	8	30(7)A	13(7)A	17
23.	Librarian	1		1			
24.	Assistant Librarian	1	1				
25.	Junior Artist	2	2				
26.	Jamadar	1	1				
27.	Class IV Worker	30	30		43	41	2
28.	Machine Operator	1	1				
	Total	233(9)	211(9)	15	316(13)	252(13)	64

10.1.8 Available Capacity and Skills of Statistical Staff⁷

All staff has the required minimum qualifications.

¹ A = Abeyance

⁷ IT training requirements are discussed in Chapter 6

10.1.9 Status of Training

In-service training has been provided to some DES technical staff.

10.1.10 IT Resources, Available and Additional Required

The available and required IT resources in DES, and DSOs is given below

The additional requirements of hardware for DES headquarters and related costs are given in Table 10.9 and 10.12 below.

Table 10.9: Available and Required Hardware at the DES Head Quarters

Sl No	Particulars	Available	Required	Net Requirement	Approx Unit ⁸ cost (Rs.)	Approx Total Cost (Rs.)
1.	High end server	-	1	1	1,00,000	100000
2.	FTP/E-Mail/ Web Proxy Server	1	1	1	80,000	80000
3.	Desk tops	79 ⁹	114	35	35,000	1225000
4.	GIS Workstation	-	1	1	80,000	80000
5.	Plotter	-	1	1	1,20,000	120000
6.	Laser and DMP printers	8	8	0	50,000	0
7.	Ink Jet Printers	4	4	0	5,000	0
8.	Scanners	-	2	2	6,000	12000
9.	Lan(wired/wireless)	-	1	1	50,000	50000
10.	LCD Projector	-	1	1	1,40,000	140000
11.	Lap Top	-	1	1	1,00,000	100000
12.	UPS – 5 KVA ¹⁰	-	1	1	90,000	90000
13.	UPS – 500 VA	-	114	114	3,000	342000
14.	DAT Drive – Back UP	1	1	0	30,000	0
15.	Back up – Low end	-	1	1	4,000	4000
16.	Computer Furniture	-	114	114	4500	513000
					Total	2856000¹¹

⁸ Price taken for calculations is the street price as on October 11, 2006, at New Delhi

⁹ Older 286 machines are not reckoned as they are obsolete

¹⁰ The existing UPS is 2 KVA

¹¹ The following costs have to be factored in , Annual maintenance costs @ 12-15% of Hardware value every year , Hard ware upgrades @ 20% of Hardware value every year and Solid cell batteries @ 20% of UPS, Site Hosting Charges @ Rs.10,000/- Per year.

Table 10.10: Available and Required Software by DES

SI No	Particulars	Available	Required	Net Requirement	Approx Unit Cost ¹² (Rs.)	Approx Total Cost (Rs.)
1.	Windows 2000 Server	-	2	1	25,000	25,000
2.	Anti – Virus	-	1	1	30,000	30,000
3.	RDBMS	-	1	1	1,00,000	1,00,000
4.	SPSS/STATA	-	1	1	1,00,000	1,00,000
5.	Data warehousing s/w		Optional			
6.	Encryption s/w		Optional			
7.	Back up and disaster recovery s/w		Optional			
Total						2,55,000¹³

The requirement of additional hardware/software resources in DSO's and Cost of Procurement is given in the table below:

Table 10.11 - Ideal IT Infrastructure of DSO

SI No	Particulars	Quantity	Approx Unit cost (Rs.)	Approx Total Cost (Rs.)
1.	Server – Low end	-	1,00,000	1,00,000
2.	Desk tops	5 ¹⁴	25,000	1,25,000
3.	Dot Matrix Printer	1	40,000	40,000
4.	Ink Jet Printer	1	4,000	4,000
5.	Photostat Machine	1	2,50,000	2,50,000
6.	Air Conditioner	1	25,000	25,000
7.	Computer tables	5	2,000	10,000
8.	UPS – 3 KVA	1	70,000	70,000
9.	UPS – 500 VA	5	3,000	15,000
10.	LAN – (wired/wireless)	Set	50,000	50,000
11.	Back UP – DAT	1	30,000	30,000
12.	Optional Software	1	50,000	50,000
13.	Windows 2000 server s/w	1	25,000	25,000
14.	Anti virus s/w	Set	20,000	20,000
15.	RDBMS	1	1,00,000	1,00,000
16.	Total approx costs for one DSO			9,14,000
17.	Total approx costs for thirty two DSO's			2,92,48,000

The requirement of IT resources by line departments is given in the table below:

¹² Price taken for calculations is the street price as on October 11, 2006, at New Delhi

¹³ MS office programs are assumed to be acquired pre-loaded with the new hardware and hence no separate provision is made

¹⁴ There are some DSO's with old machines and others with no machines, , therefore five machines are recommended on an incremental basis

Table 10.12: Available and Required IT Resources by Line Departments

SI No	Particulars	Available Quantity	Additional Requirement	Approx Unit cost (Rs.)	Approx Total Cost (Rs.)
Board of Revenue¹⁵					
1.	Desk tops	-	2	35,000	70000
2.	Ink Jet Printer	-	1	4,000	4000
3.	Dot Matrix Printer	-	1	60,000	60000
4.	UPS – 500VA	-	2	4,000	8000
5.	Anti virus	-	1	30,000	30000
6.	CD Writer	-	1	5,000	5000
Sub Total					177000
Directorate of Family Welfare¹⁶					
Directorate of Public Health					
7.	Desk tops	-	2	35,000	70000
8.	Ink Jet Printer	-	1	4,000	4000
9.	Dot Matrix Printer	-	1	60,000	60000
10.	UPS – 500VA	-	2	4,000	8000
11.	Anti virus	-	1	30,000	30000
12.	CD Writer	-	1	5,000	5000
Sub Total					177000
Directorate of Primary Education					
13.	Desk tops	-	2	35,000	70000
14.	Ink Jet Printer	-	1	4,000	4000
15.	Dot Matrix Printer	-	1	60,000	60000
16.	UPS – 500VA	-	2	4,000	8000
17.	Anti virus	-	1	30,000	30000
18.	CD Writer	-	1	5,000	5000
Sub Total					177000
Department of Labour					
19.	Desk tops	-	2	35,000	70000
20.	Ink Jet Printer	-	1	4,000	4000
21.	Dot Matrix Printer	-	1	60,000	60000
22.	UPS – 500VA	-	2	4,000	8000
23.	Anti virus	-	1	30,000	30000
24.	CD Writer	-	1	5,000	5000
Sub Total					177000
Forest Department¹⁷					
25.	Desk tops	-	3	25,000	75,000
26.	UPS – 500VA	-	3	4,000	12,000

¹⁵ The Board of Revenue has two Celeron TM PCs with Printer for processing Crop Estimation Survey data and the Rainfall data, further the Agriculture Department has computers up to sub-district level duly net worked up to the State level

¹⁶ The Directorate is computerized and there are PCs at sub divisional level duly networked with the central server and the networked printer with facilities for on line information. The software is provided by the NIC under an MOU.

¹⁷ The Department is computerized fully with facilities for video conferencing and networking with the Conservator of Forests in the ranges. But no IT tool is used for statistical work, and compilation and tabulation of data is mostly done manually.

SI No	Particulars	Available Quantity	Additional Requirement	Approx Unit cost (Rs.)	Approx Total Cost (Rs.)
27.	Laser BW Printer	-	1	60,000	60,000
28.	Back up DAT		1	30,000	30,000
29.	Anti virus		1	30,000	30,000
30.	RDBMS		1	50,000	50,000
				Sub Total	2,57,000
	Transport Department¹⁸				
	Total				9,65,000

10.1.11 Total Cost of IT Procurement

This is given in the table below:

Table 10.13 - Total estimated costs for IT Infrastructure for DES, ROs, DSOs, and Line Departments

Details	Approximate costs (Rs.)
Requirements of IT - Hardware resources in the DES Head Quarters	28,56,000
Requirements of IT - Software resources in the DES Head Quarters	2,55,000
Requirements of IT – Hardware/ Software resources in the DSO’s offices	2,92,48,000
Requirements of IT – Hardware/ Software resources in the Line Departments	9,65,000
Total	3,33,24,000

10.1.12 Physical infrastructure

DES Office Space for DES: The head office of the DES is housed at Yojana Bhawan, Tilak Marg, Jaipur. This premise is adequate for the purposes of the Directorate in the short term future.

DSOs Office Space: All the 32 District Statistical Offices are located in the Collectorate offices at the district headquarters. Though in terms of access to other District Level Organizations , the location is very good, but in terms of adequacy of the office space commensurate with the current and proposed activities of the DSO’s they are inadequate. It is estimated that one DSO will require an average of 1850 square feet.

Vehicles: The DES Head Quarters requires two vehicles. None of the 32 DSO’s has any vehicle that is road worthy. This is impacting adversely on field level operations including supervision of field activities.

Office Automation Equipment: The DES and DSOs do not have working photocopiers and fax equipment.

Transport Vehicles: The Directorate has adequate number of vehicles

¹⁸ Registration of vehicles is on line. The Department has a full-fledged Computer Centre connected to their District Offices who provide on line data to the Centre. Processing of data is done on PCs in the Commissionerate.

10.2 Findings - Management of Statistical System

10.2.1 DES in the Statistical System

The Directorate of Economics and Statistics (DES), Rajasthan is under the administrative control of the Planning & Statistics Department of the Government of Rajasthan and is recognized as the nodal organization for all statistical matters. It is responsible for bringing out important statistical aggregates like State and District GSDP, conducting important surveys and census of government employees, and publishing compilations of statistics on the entire gamut of activities in the economy, whose essentiality is widely recognized. Even though DES is the Nodal Point for all statistical activities, several departments like agriculture, collecting statistics are outside its influence.

10.2.2 DES and participation in decision-making

The Director of DES is generally the representative of the State in all technical deliberations organised by CSO through various working groups/steering committees. It may, however, be noted that most of the statistical activities (for example, the agricultural census, the livestock census, health and educational information systems, IIP for small scale industries, fisheries information system, etc.) of the line departments are undertaken in pursuance of the requirements from the concerned union ministries/departments, either as central or centrally-sponsored schemes, who lay down the procedures in detail. The DES, thus, does not seem to have much role in decisions on technical aspects of such schemes.

10.2.3 Coordination Mechanism

Within the DES Headquarters, though there is no formal machinery at the State level for inter-organizational coordination of statistical activities, there does not seem to be significant constraints in data flow to DES from various departments. Data are either collected on a personal basis or through mail in regular or ad hoc formats prescribed. Use of e-mail and other forms of electronic transmission of information, though encouraged, is still in the early stages of application.

DES and CSO depend on each other for a number of statistical inputs and outputs as well as technical consultations. On quite a few occasions, CSO requires information not only from DES but in respect of other departments as well. In such cases, DES, being the nodal agency for statistics, is called upon to play the coordinating role. The coordination is ensured through annual meeting of Central and State Statisticians, as well as special technical committees to handle specific issues.

10.2.4 Common Statistical Cadre

The State has a common Statistical Cadre governed by the Rajasthan Statistical Service Rules. The Secretary to the Government, Statistics & Planning Department, controls the gazetted cadre while the director of Economics & Statistics controls the non-gazetted cadre under the State Statistical Service Rules.

10.2.5 Training

Limited staff has received in-service or other training.

10.2.6 Dissemination of statistics

Transmission of Raw Data: Transmission of raw data to DES continues to be done using conventional methods like mail in regular or ad hoc prescribed formats. This not only delays data transmission but also carries with it the risk of reducing the data quality. Electronic transmission though encouraged, is still not implemented.

Dissemination of Final Outputs: Many of the regular publications of DES, like the Statistical Abstract of Rajasthan, are behind schedule. The main reason cited for the delays was the low priority assigned to statistical publications by the government printing press, even though DES provides the material in CD form. The possibility of providing desk-top printing facilities in the EDP Centre of DES should be explored.

10.3 Recommendations

Based on our assessment of the quality of the statistical activities in chapter 4, and assessment of manpower and infrastructure- both IT and Physical, in chapters 7 and 8 respectively our recommendations are given below:

10.3.1 Improving Data Quality

DES should give priority attention to improving data quality by taking steps to fulfill data gaps, improve the accuracy of source/field data; use computers with relevant software for data compilation, processing and report generation; reducing time lag; strengthening supervision for data collection at field level; instituting mechanisms for data scrutiny and validation, among others. For example, to improve the quality of SDP and DDP data, DES should initiate type studies for estimating rates and ratios/indicators at State/district level under the technical guidance of the CSO. Also, Socio Economic Survey adopting sampling techniques should be carried out in the State once in three years to fill up data gaps in the social sector.

10.3.2 Managing Data Quality

Given the central importance of quality to the State's Statistical System, and the fact that most of the twenty core statistical activities have been evaluated to be of low quality using IMF's DQAF, the management of quality must be built into the management and technical practices of DES and the line departments. Quality management should be built and mainstreamed with the design of individual statistical activities and programs. For this DES needs to develop appropriate policies, procedures, and guidelines to promote, facilitate, and fortify activities and behavior consistent with the concern for quality. In this context consideration may be given to adapting the quality management system and structure, and quality improvement

guidelines of Statistics Canada with appropriate modifications and adjustments to account for local administrative structure and practices.¹⁹

10.3.3 Building District, Block, and Village Data

As discussed above, data availability for districts, blocks and villages is inadequate to meet the needs of policy makers with respect to local planning, and local governance *a la* the provisions of the 73rd and 74th Constitutional Amendment Acts. The DES and concerned line departments should develop a well articulated framework for generating district, block, and village level statistics together with a time bound action plan for generating the required data.

Further, for efficient management of Block and village level data, consideration should be given to bringing all the statistical activities at the Block level directly within the fold of the DES and bringing it under the Directorate's technical supervision through the District Statistical Offices.

10.3.4 Service Sector Statistics

The services sector is growing rapidly in Rajasthan and is contributing significantly to State's income. It is, therefore, important to factor in the service sector's income in estimation of State Income Statistics. DES should take the initiative in structuring a structure, system and action plan for collection and compilation of service sector statistics.

10.3.5 Housing Statistics

Two activities are proposed. First, DES should become a depository of all housing statistics. For this, DES should annually collect complete housing statistics from all agencies involved in housing like Community & Rural Development, Housing Board, Urban Development Department, and Local Bodies periodically, so as to have housing statistics at one place. This task could be assigned to the Official Statistics Division of DES.

Second, DES should undertake periodic sample surveys of housing including construction activities to assess addition to housing stock including the socio-economic profile of owners of housing stock. This task could be assigned to the Economic Survey Division of DES.

10.3.6 Poverty Statistics

The World Bank has advocated the need for developing a comprehensive statistical system for generating poverty statistics to provide the required data for both national and international interventions for poverty reduction and promoting sustainable livelihoods. Thus, an important aspect of data collection and analysis in Rajasthan should be the ability of the statistical system to generate information pertaining to people below the poverty line. The guidelines for poverty statistics developed by the

¹⁹ See Annexures 5 & 6

UN Special Project on Poverty Statistics should be considered for adoption for developing a framework and methodology for poverty statistics.²⁰

10.3.7 Environmental Statistics

Rajasthan is faced with several environmental problems related to desertification, for example, the rapidly depleting ground water table that may create drinking water crisis in the State. Both the State and Central Governments have assigned a high priority to finding solutions to environmental impact of gradually increasing desertification of the State. This has led to a high demand for a comprehensive environmental data base, which is most inadequate as of now. DES should undertake this activity and develop a sound environmental statistical base by creating a data base based on the needs of the policy makers, the environment activists, and the international community. The data base should address the environmental statistical requirements arising from the need for environmental decisions on several issues as elaborated in Chapter 9.

10.3.8 Tourism Statistics

A detailed database on tourism is required to facilitate formulation of tourism development strategy and plan. While data is available on tourist arrivals, there is inadequate data on tourists' expenses, employment generated in the tourism sector, and tourist profiles by origin and sex, among other parameters. DES should initiate activities to close these data gaps.

10.3.9 Gender Statistics

The current decade has witnessed some very important developments in the women's onward march towards equality with men. During the last couple of years, the focus has decisively shifted from welfare of women to empowerment of women, which has been recognised as the key factor for bringing about improvements in the status of women. To reflect the status of women in the contemporary Indian society and its concern towards their emancipation, monitoring of various socio-economic indicators, which are integral to the empowerment of women, has assumed greater significance. Thus, gender statistics are beginning to emerge as an important factor in social statistics triggered by the emphasis placed on gender issues by the Government, and the plan to mainstream women with the development process. This has led to high demand for gender statistics²¹. Gender statistics is a relatively new field and conceptually more than just data broken down by sex – the basic concepts are discussed in Chapter 9.

10.3.10 Dissemination of Statistics

In Rajasthan, formal publications continue to be the major mode of data dissemination. Some of the publications are priced, and most do not adhere to a

²⁰ Handbook on Poverty Statistics: Concepts, Methods and Policy Use, Special Project on Poverty Statistics, United Nations Statistics Division, December 2005

²¹ DES Rajasthan has recognised the importance of gender statistics and keeping in view felt need of planners and policy makers, it has brought out the publication "Women and Men in Rajasthan - 1999". The publication contains time series data on a large number of indicators covering various facts of development aspects of women in the state. It includes rights & privileges of women population, health, family planning, economic status, education, decision making, employment, crimes etc.

calendar of publications. Data is seldom provided on a request basis unless requests emanate from a government department/agency.

IMF's Special Data Dissemination Standard (SDDS).²² specifications for data dissemination in terms of coverage, periodicity and timeliness are given in Table 10.14 below. The details are provided in Annexures 4 and 5

Table 10.14: Basis of IMF Special Data Dissemination Standard

Coverage:	The categories and components that are most important in shedding light on macroeconomic performance and policy. The standard identifies for each of the four sectors of the economy (i) a comprehensive statistical framework; (ii) data that permit frequent tracking of the principal measures in the framework; and (iii) other data relevant to the sector.
Periodicity:	The frequency of compilation--daily, weekly, monthly, etc.
Timeliness:	The maximum lapse of time between a reference date (or close of a reference period) and dissemination--for example, one month.

The evaluation of data dissemination indicates that a number of actions are required to improve dissemination. Some of these are:

1. Improvements in coverage, periodicity, and timeliness. We recommend that the SDDS specifications, to the extent feasible, be adopted and enforced by Rajasthan's statistical system so that its data dissemination is mainstreamed with the national efforts to meet SDDS requirements
2. Making data easily accessible
3. Introducing electronic mode of data dissemination.
4. In order to reduce the time in printing of statistical publication, the departments may be allowed to engage the services of government approved private printing firms/establishments.
5. To enhance people's perception about integrity of disseminated data, it would be important for DES to disseminate technical notes concerning methods, concepts, and data limitations
6. Reaching out to data users, both in the government and the nongovernmental sectors, represents another area requiring attention. A modest start can be made by inviting key users to participate in short seminars hosted by DES at which the role, functions, and challenges faced by DES could be expounded. Such seminars would serve three broad purposes:(a)develop closer relationships with users;(b)serve as a forum for receiving user feedback, and (c)remove common misconceptions about particular statistical series, e.g. the data on consumer and retail prices, etc.

10.3.11 Providing Adequate Human Resources

All the steps recommended above to enhance data quality will require adequate skilled manpower resources. Accordingly, it is recommended that the small additional

²² The GoI is a signatory to the SDDS protocol and is striving towards meeting these standards for national level statistics..

manpower required by DES as identified in Chapter 7 should be recruited without much delay.

10.3.12 Developing Manpower Skills

Having adequate staff is a necessary pre-requisite for improving data quality in terms of adequacy/coverage, accuracy, reliability and timeliness. But this is not a sufficient condition. Generation of quality data requires skilled staff. As noted above, most of the current statistical staff is deficient in statistical skills both at the operational level – routinised methods of data collection, processing and summarization – and statistical methods to improve the practice of statistics, that is, use of “applicable theoretical techniques”. The latter deficiency is of particular concern as the statistical staff is not fully conversant with “applicable theoretical techniques”. Further, the DES statistical staff do not have adequate capabilities to tabulate data on demand and to analyse data from different sources.

It is thus imperative for DES to have a detailed training programme to upgrade the staff skills in the two broad areas as given above. The areas of training have been indicated below, and the first step that DES should take is to establish a structured training programme. Periodic refresher training programmes should be periodically conducted for all the officers and staff of DES. Refresher training could be conducted in house in collaboration with CSO and focus on the following areas, among others: (i) principles of economics; (ii) system of national accounts; (iii) time series analysis and forecasting; (iv) geographical information system; (v) classificatory analysis; (vi) techniques of pooling NSS Central and State Sample data; and (vi) information technology.

Some specific recommendations for skill development are given below.

DES should develop a training programme focussed on the following distinctive areas and linked with the on-going and planned statistical activities:

1. Induction training course for all new statistical staff
2. Training for middle level staff
3. Refresher training programmes for all officers
4. Specialized training programmes to develop a core group of specialists who can also serve as trainers
5. Management of Statistical System

Induction Training: All new statistical staff should be given induction training, preferably after an initial period of six months to one year. The induction training modules should include the following, among others:

1. An overview of the National and State Statistical Systems
2. Basic economic, social sector, and local area planning statistics
3. Fundamentals of national accounting
4. The role of sample surveys, censuses, administrative data in a statistical system
5. Management of statistical programs – data flow, coordination etc. – including
6. Planning, budgeting, organizational principles

7. Use of standard computer packages and data presentation

Training for Middle Level Staff: As the middle level staff plays a critical role in execution of statistical activities, it needs to be formally trained to enhance their productivity and efficiency. Given the functions of middle level staff, they should be trained in the following areas, among others:

1. Techniques of data validation and verification
2. Use of standard computer packages in data editing and tabulation
3. Interview techniques in household surveys
4. Database maintenance and other core operations.

It is further suggested, that training should be supplemented by special training associated with particular surveys and statistical computations so as to get hands-on training. It is suggested that the above training be provided by DES at the DSO and SDM levels who have the responsibility for generating source and field level data. The responsibility for the preparation of training materials should be assigned to the CSO so as to maintain uniformity of standards across all States and Union Territories. The training module should preferably be interactive making use of computer assisted instruction techniques.

Refresher Training Programmes: Periodic refresher training programmes should be periodically conducted for all the officers and staff of DES. Refresher training could be conducted in house in collaboration with CSO and focus on the following areas, among others:

1. Principles of economics
2. System of national accounts
3. Time series analysis and forecasting
4. Classificatory analysis
5. Techniques of pooling NSS Central and State Sample data;
6. Information technology
7. Geographical Information System

Specialised Training Programmes: It is suggested that specialised training be provided in the following areas, among others:

1. Statistical Methods
2. Advanced Statistical Methods/Techniques
3. Survey Methods and Data Collection
4. Data Processing
5. Data Tabulation
6. Data Analysis
7. Data Management
8. Report Preparation

Specialised training should be provided through nationally organized courses, for example by the CSO. However, some key professional staff may be sent abroad to be trained in new and advanced statistical methods and approaches. This could be through study tours and participation in overseas courses or through courses and

seminars delivered by foreign experts or a combination of the two approaches. The staff thus trained should be used as part time specialist trainers.

Management of Statistical System: To improve the management of the State's Statistical System, it is imperative for DES Director and functional heads within DES and DSOs to have a through understanding of the role and functioning of a modern statistical system so that appropriate reform measures, as required, are planned and initiated. It is suggested that courses in the following areas are developed and organised:

1. Management principles
2. Project planning and management in the context of overall priorities with respect to Statistical activities and operations.
3. Financial management
4. Human resource management

Training Venues: While in-service training can be provided within DES, advanced training may be provided by CSO, and the Indian Statistical Institute, New Rajasthan.

10.3.13 Training in IT

To enhance the IT skills of DES staff, the following areas of training are suggested in the Table below:

Table 10.15: Suggested Areas of Training in IT

SN	Title	Duration	Frequency	Description
1	Computer Orientation - Basic	1 week	Regular	Introduction / refresher with concepts, terms, Introduction to MS Office, particularly to MS Word & MS Excel and Email usage. To be taken by all Group A, B and C personnel except support staff like drivers etc.
2	Computer Orientation - Advanced	1 week	Regular	Computer Usage – Level 2 course. With advanced features of MS Word & MS Excel, Presentation skills, Internet usage skills, introduction to a statistical package like SPSS. 10 to 20 % of the staff should undergo this training every year
3	RDBMS – Basics	2 weeks	Request	Grade B & C. Basics of Access and Oracle
4	RDBMS – Advanced	2 weeks	Request	EDP staff
5	Statistical Analysis – SPSS	1 – 2 weeks	Request	All staff in data analysis and interpretation.
6	Hardware Troubleshooting	1 week	Limited	2 per office
7	GIS - Arc Info	As per vendor	Request	GIS
8	Software development – Microsoft Technologies –		Request	Visual Basic, VBA; system design

SN	Title	Duration	Frequency	Description
	Basic			
9	Software development – Microsoft Technologies – Advanced		Request	.NET; associated courses; system analysis; documentation requirements
10	Website development usage		Request	Tools like Flash, Cold Fusion, Go Live, Dream weaver etc.;
11	Data warehousing and mining		Request	Storage; tools; concepts; optimization
12	Data center maintenance		Request	For EDP staff, Administrative tasks, backup and archival tasks and procedures; system log maintenance; etc.

10.3.14. Training Infrastructure

It is suggested that DES develop the required infrastructure in-house including procurement of training equipment. Advanced training can be provided at the CSO and the Indian Statistical Institute Kolkatta and Delhi.

10.3.15 Strengthening IT Infrastructure and Use

As is well known, electronic compiling, tabulation and processing of data is critical for ensuring accuracy of data as well as its timely release and dissemination. Equally important is IT's role in networking and establishing strong communication links within DES and with (i) DSOs; (ii) the State's line departments; (iii) the National Statistical Organisation (NSO) and all its subordinate offices; (iv) all Central Ministries with substantial statistical output; (v) all State Directorates of Economics and Statistics (DEs); and (vi) the National Sample Survey Office and its Survey Design and Research Division, Data Processing Division, Field Operation Division and Coordination and Publication Division, among others. Accordingly, we recommend that DES should be provided with a robust IT infrastructure using an integrated architecture linking all stakeholders – the three tiers of State government, CSO, NSSO, DEs of other states/UTs, among others like ISI - through IT-based communication network.

The current IT resources of DES and line departments are inadequate. On the basis of our assessment of the current IT infrastructure vis-à-vis activity-based need, we have recommended a configuration of hardware and software required by DES. We recommend that urgent steps be taken by DES to procure and activate the recommended hardware and software. Simultaneously, steps should be taken to train all statistical staff including officers in DES in the use of IT tools. Also, to ensure accountability and long-term sustainability of the recommended IT infrastructure, we strongly suggest establishment of an Electronics Data Processing Centre within the overall control and authority of DES.

Simultaneously, with the above steps, we recommend a number of measures for creating an enabling IT environment: (i) the working environment for IT should be improved; (ii) relevant strategies for regular equipment maintenance and data backup, should be introduced, for example, a standard RDBMS; (iii) web based solutions should be implemented to take advantage of centralized data access and control - this

will require connectivity between various locations; (iv) a procurement system with well articulated processes and full transparency and accountability should be developed to make IT related procurement timely and efficient; and (v) electrical panels should be avoided in areas where IT equipment is installed as the magnetic rays, which are emitted from the transformer of the electric panel, can harm the computer hardware and can lead to the corruption of storage devices like hard disks.

10.3.16 Data Bank

Data Bank may be created in DES with suitable staff with Internet facilities. The existing website of DES should contain all current data of the State for use of general public.

The DES should be the depository of all data on the State and have a “Data Bank” for use by policy makers, researchers, educational institutions, and members of civil society. The primary and secondary data collected/available should be stored in the form of time series data. The proposed Data Bank should have data regarding all sectors from all government and private agencies not only for the State but also for district level and below. The need for data bank is predicated on the fact that though DES in the State has been in existence for several decades, most of the data collected by DES over this long period is not available now. This is a loss of serious magnitude.

10.3.17 Upgrading Physical Facilities

The physical facilities of DES need to be upgraded through provision of office space, vehicles and IT infrastructure including networking and connectivity. The details with cost estimates are given in the table below:

Table 10.16: Physical Facilities Required by DES and DSOs and Estimated Cost

S.N	Particulars	Approx unit Cost Rs. Lakhs	Number of Offices/units	Amount in Rs. Lakhs
1.	Building for DSO's	18.50	32	592.00
2.	Vehicles	4.50	34	153.00
3.	Photo Stat Machines	.80	34	27.20
4.	Water Dispensers	.10	34	3.40
5.	Self Starting Generator	6.00	1	6.00
6.	Air conditioners	0.25	34	9.00
7.	Office furniture	.50	32	16.00
Total				806.60

10.3.18 DES as Nodal Agency

The DES is the nodal agency for all statistical activities. To enable the DES to play its role more effectively consideration should be given to the following functions:

1. Advising the State Government with respect to the approval or otherwise of any proposal for data collection submitted to the Government as a plan / non-plan scheme programme by any department.
2. Rendering advice to all departments in respect of their data collection programme and other statistical activities including tabulation.

3. For maintaining one unique set of data, the data sent by Government and other offices to Central Government and other offices should be routed through the Directorate of Economics and Statistics so that duplication of data is not possible. In this regard, a concrete decision in the form of a resolution should be taken by the Government.
4. Assisting in the evolution of a sound statistical system.
5. Standardization/ clearance of all schedules/ formats meant for collection of statistical data.
6. Ensuring adoption of uniform concepts and definitions of terms for collection of statistical data.
7. Ensuring the elimination/ minimization of duplication of statistical work among other departments.
8. Suggesting ways and means for optimum utilization of resources deployed for collection of statistics.
9. Imparting training to the intermediate primary level statistical personnel of all departments.
10. Tabulation and digitization of data for all surveys.

Further, the Director, DES should be associated with all major data collection programmes like Agriculture Census, Livestock Census, BPL census, etc.

10.3.19 Representation of the Director, DES in State Level Committees

The Director DES should be made a member of various State level committees constituted by different departments so as to participate in decision making on vital issues of the government. This will facilitate DES in exercising its authority as the Nodal Agency

10.3.20 Improving Coordination between DES, Line Departments, CSO and States

The information flows from other Departments after prolonged correspondence, repeated approach and so on. It is important to structure a mechanism/system for coordination and to institutionalize it.

In order to take a holistic approach towards the State's Statistical System and to enhance its utility to the State Government, as recommended by the National Statistical Commission²³, the Directorates of Economics and Statistics should be formally entrusted with the responsibility for a periodic review of the content, methodology and output of the statistics of all State Departments and to make suggestions for further improvement of these statistics. The Conference of Central and State Statisticians should be held regularly. A forum should be established by the State Government for regular structured meetings of State Departmental Statisticians to review the performance of the statistical system of the State.

There is good co-operation between the DES and the Central Government/ Ministries and also between State DES and DES of other States. The co-operation could be

²³ Report of the National Statistical Commission, Paragraphs 14.5.24 to 14.5.27

more effective and fruitful, if periodical meetings are held by GOI with DESs of states to overcome some of the problems faced by the State DES

10.3.21 Recommendations of DES

The following are the recommendations of DES:

1. For strengthening the Directorate of Economics and Statistics, and DESOs, they need to be well equipped with computers and other infrastructural facilities, and adequate staff.
2. Departments without statistical cell must establish one.
3. The statistical personnel should be trained.
4. Statistical set up for the Directorate of Economics and statistics must be reviewed to improve the official cadre so that other state government departments recognize the importance of statistical work.
5. Following are the specific immediate requirements:
 - a. Computer hardware and software support with networking facilities should be the first priority for improving / strengthening the statistical cells not only for DES and DSOs but also for the statistical cells working in other departments.
 - b. Training of officers and statistical staff by professional experts, academicians and retired officers for improving the skill for analysis and report writing.
 - c. Filling up of vacant posts
 - d. A well equipped training hall
 - e. Mobility of staff
 - f. Opening of budget head for hiring from time to time the services of subject experts of various fields
 - g. Solution of pay anomalies of the subordinate staff

Terms of Reference and Composition of the Task Force

A. Terms of Reference

The terms of reference of the Task Force broadly are:

- Operationalise the Project Component ‘Study for Identifying Specific Requirements of Strengthening of State Statistical Bureaus’.
- Brief the consultants, monitor their activities and provide guidance where required.
- Ensure that consultants work according to the guidelines prescribed by the Steering Committee and achieve the time targets and scheduling with emphasis on quality parameters.
- Coordinate efforts through the Project Implementation Unit, CSO in-charge of Implementation of World Bank Project in order to prevent duplicate efforts, gaps and inconsistent effort.
- Approving the parameters of evaluation, work plan, report and project document.
- Apprise the Steering Committee periodically about the status of the component implemented by the Consultant.

B. Composition of the Task Force

The Composition of the Task Force is as under:

Sl. No.	Designation	Position
1.	Additional Director General (FOD)	Chairman
2.	Secretary (Planning), Government of Assam	Member
3.	Secretary (Planning), Government of Maharashtra	Member
4.	Secretary (Planning), Government of Rajasthan	Member
5.	Director, DES, Government of Uttar Pradesh	Member
6.	Director, DES, Government of Andhra Pradesh	Member
7.	Director, DES, Government of Delhi	Member
8.	Economic Advisor, Ministry of Rural Development	Member
9.	Chief Director, Ministry of Health & Family Welfare	Member
10.	Economic Advisor, Deptt. of Economic Affairs, Ministry of Finance	Member
11.	Advisor, perspective Planning Division, Planning Commission	Member
12.	Additional Director General, NAD,CSO	Member
13.	Additional Director General, Social Statistics Division, CSO	Member
14.	Representative of NABARD (not below the rank of General Manager)	Member
15.	Director, Project Implementation Unit, CSO	Member
16.	Director (Planning & Coordination), FOD	Member Secretary

The Task Force may co-opt other experts as special invitees.

List of Contacts Made

Department	Person Contacted
Secretary Statistics	Ms V. Gupta
Deputy Secretary, Plan Finance, Planning Department	Mrs L. Bhatnagar
Deputy Secretary Monitoring, Planning Department	Mr. D.K.Jain
Deputy Secretary Manpower & Gazetteer, Planning Department	Mr. D.P.Kanungo
Deputy Secretary Institutional Fin. Planning Department	Mr. B.L.Sharma
Joint Director Agriculture Department	Mr. S Dadich
Food & Civil Supplies	Statistical Officer
Urban Housing & Development Deptt	Mr. B.N..Garg
Tax Research Cell, Finance Deptt.	Asstt. Director Mr. R.S.Gupta
Director Economics & Statistics	Mr. D.K.Jain
Deputy Director Vital Statistics	Mr. B.R.Jat
Deputy Director, SDP & Price Unit	Mr. Y.N.Malhotra
Deputy Director Coordination, DES	Mr. R.K.Pande
Deputy Director, Animal Husbandry Department	Dr. Mrs. P.Sharma
Deputy Director, Education Deptt.	Mr. M.L.Vyas
Statistical Officer, Forest Deptt.	Mr.R.K.Gupta
Deputy Director Hyman Development Research Project	Mr. R.K.Pande
Director Agricultural Census Deptt.	Mrs. Rita Tiwari
Director Evaluation	Mr. S.D.Parashar
District Statistical Officer, Ajmer	Mr Vyas
Joint Director Statistics, Board of Revenue, Ajmer	Mr. Vyas
Deputy Director, Panchayati Raj	Mr. S.C.Gupta
Deputy Director, Project Monitoring Unit, Planning Department	Mr. P.M.Vyas
Statistical Assistant Fisheries Deptt	Mr SKGupta
Deputy Director Local Bodies	Mrs. N.L.Sharma
Deputy Secretary Rural Development	Mrs. Madhu Pokarna
Assistant Director Statistics Transport Department	Mr. B.K.Sharma
Joint Director Statistics, Commercial Taxes Department	Mr. M.L.Kabra

Department	Person Contacted
Deputy Director Statistics, Industries Department	Mr Sharma
Demographer, Medical & Health	Mr Parashar
Assistant Director Statistics Cooperative Department	Mr. Badgoojar
Assistant Director Statistics, Labour Commissioners Office	Mr Gupta
Deputy Director Statistics, Tribal Area Development.	Mr.J. S.Meena
Deputy Director Statistics, Irrigation Department	Mr. S.Meena
Computer Centre, Planning Department	Mr. S. Ahmed
Deputy Director Statistics, Economic Policy & Reforms Council Deputy Director Social Welfare Deptt. Director, Adult Education Department	Mr.S.K.Taneja Mr Surjeet Meena Mr. A.C.Sharma
Project Director Research, State Resource Centre, Adult Education Deptt.	Mr. Sudhanshu Jain

Annexure 3

Rating of Developing countries' current statistical practice¹

Score	Sub-Saharan Africa	East Asia & Pacific	Eastern Europe & Latin America	Central Asia & Caribbean	Middle East & North Africa	South Asia
0 (no GNI data)	Central African Republic Liberia Somalia					Afghanistan
1-2 (average GNI for group = \$520)	Burundi Congo, Rep. Eritrea Guinea-Bissau Mali Mauritania Sudan Swaziland			Cuba Haiti	Iraq West Bank and Gaza	
3-4 (average GNI for group = \$910)	Angola Benin Burkina Faso Cameroon Chad Congo, Dem. Rep. Cote d'Ivoire Gambia Ghana Guinea Madagascar Mozambique Namibia Niger Nigeria Rwanda Senegal Sierra Leone Togo Zimbabwe	Cambodia Korea, Dem. Rep. Lao, PDR Mongolia Myanmar Papua New Guinea Vietnam	Tajikistan Turkmenistan Uzbekistan Yugoslavia, Fed. Rep.	Bolivia Honduras Jamaica Nicaragua Panama Trinidad and Tobago	Algeria Iran, Islamic Republic Lebanon Libya Oman	Nepal
5-6 (average GNI for group = \$1,390)	Botswana Ethiopia Gabon Kenya Lesotho Malawi South Africa Tanzania Uganda Zambia	China Malaysia	Albania Armenia Azerbaijan Bosnia and Herzegovina Bulgaria Georgia Kazakhstan Kyrgyz Republic Moldova Romania Russian Federation Ukraine	Costa Rica Dominican Republic Ecuador El Salvador Guatemala Paraguay Uruguay	Egypt, Arab Rep. Morocco Syrian, Arab Rep. Yemen, Rep.	Bangladesh Pakistan Sri Lanka
7-8 (average GNI for group = \$3,320)	Mauritius	Indonesia Philippines Thailand	Belarus Czech Republic Croatia Estonia Macedonia, FYR Poland Slovak Republic Slovenia Turkey	Chile Colombia Mexico Venezuela, R.B.	Jordan	India
9-10 (average GNI for group = \$4,680)		Korea, Rep	Hungary Latvia Lithuania Brazil Peru			

¹ Source: Building Statistical Capacity to Monitor Development Progress, World Bank, 2002

IMF SDDS: Coverage, Periodicity, and Timeliness

This table summarizes the data dimension of the Special Data Dissemination Standard.

Coverage			Periodicity	Timeliness
Prescribed		Encouraged categories and/or components		
Category	Components			
Real sector				
National accounts: nominal, real, and associated prices *	GDP by major expenditure category and/or by productive sector	Saving, gross national income	Q	Q
Production index/indices #	Industrial, primary commodity, or sector, as relevant		M (or as relevant)	6W (M encouraged, or as relevant)
		Forward-looking indicator(s), e.g., qualitative business surveys, orders, composite leading indicators index	M or Q	M or Q
Labor market	Employment, unemployment, and wages/earnings, as relevant		Q	Q
Price indices	Consumer prices and producer or wholesale prices		M	M
Fiscal sector				
General government or public sector operations, as relevant *	Revenue, expenditure, balance, and domestic (bank and onblank) and foreign financing	Interest payments	A	2Q
Central government operations #	Budgetary accounts: revenue, expenditure, balance, and domestic (bank and onblank) and foreign financing	Interest payments	M	M
Central government debt	Domestic and foreign, as relevant, with a breakdown by currency (including indexed), as	Debt service projections: interest and amortization on	Q	Q

	relevant, and a breakdown by maturity; debt guaranteed by central government, as relevant	medium and long-term debt (Q for next 4 quarters and then A) and amortization on short-term debt (Q)		
Financial sector				
Analytical accounts of the banking sector *	Money aggregates, domestic credit by public and private sector, external position		M	M
Analytical accounts of the central bank #	Reserve money, domestic claims on public and private sector, external position		M (W encouraged)	2W (W encouraged)
Interest rates	Short-term and long-term government security rates, policy variable rate	Range of representative deposit and lending rates	D	1/
Stock market	Share price index, as relevant		D	1/
External sector				
Balance of payments *	Goods and services, net income flows, net current transfers, selected capital (or capital and financial) account items (including reserves)	Foreign direct investment and portfolio investment	Q	Q
International reserves and foreign currency liquidity #	Total official reserve assets (gold, foreign exchange, SDRs, and Fund position); other foreign currency assets; predetermined short-term drains on foreign currency assets; contingent short-term drains on foreign currency assets; and related items. 2/		M (W encouraged)	W for total official reserve assets; M for all other items (W encouraged)
Merchandise trade #	Exports and imports	Major commodity breakdowns with longer time lapse	M	8W (4-6W encouraged)
International investment position	See specifications		A (Q encouraged)	3Q (Q encouraged)
Exchange rates	Spot rates and 3- and 6-month forward market		D	1/

	rates, as relevant			
External debt	Debt of the general government, the monetary authorities, the banking sector, and other sectors. Data should also be broken down by maturity-short-term and long-term on an original maturity basis and by instrument, as set out in the BPM5.	See specifications	Q	Q
Addendum: Population		Key distributions, e.g., by age and sex	A	...

Periodicity and timeliness: Daily (“D”); weekly (“W”) or with lapse of no more than one week after the reference date or close of the reference week; monthly (“M”) or with lapse of no more than one month ; quarterly (“Q”) or with lapse of no more than one quarter; annual (“A”).

- Comprehensive statistical frameworks

Tracking categories

1/ Given that data are widely available from private sources, dissemination of official producers may be less time-sensitive. Although dissemination by recorded telephone messages or fax services is encouraged, dissemination of these data can be made part of other (preferably high-frequency) dissemination products.

2/ The data on total official reserve assets identified in Section I, item A of the data template are prescribed with monthly periodicity and weekly timeliness. The other data specified in the data template are prescribed with monthly periodicity and monthly timeliness, unless otherwise indicated in that template.

Annexure 5

IMF SDDS - Specifications of Real Sector Statistics

The specifications of the economic and financial data for the IMF's Special Data Dissemination Standard (SDDS) are in terms of:

Coverage:	the categories and components that are most important in shedding light on macroeconomic performance and policy. The standard identifies for each of the four sectors of the economy (i) a comprehensive statistical framework; (ii) data that permit frequent tracking of the principal measures in the framework; and (iii) other data relevant to the sector.
Periodicity:	the frequency of compilation--daily, weekly, monthly, etc.
Timeliness:	the maximum lapse of time between a reference date (or close of a reference period) and dissemination--for example, one month.

National accounts

Coverage:	The national accounts feature Gross Domestic Product (GDP) as a measure of the output of the economy. For this comprehensive statistical framework, the standard calls for GDP by major expenditure category and/or productive sector, showing nominal levels and real (price-adjusted) levels, together with associated prices (deflators or price indices). At least two of the three are required. Provision of gross national income (formerly GNP) and saving is encouraged. Classification according to the 1968 or 1993 editions of the <i>System of National Accounts</i> is strongly encouraged.
Periodicity:	Quarterly
Timeliness:	One quarter

Production indices

Coverage:	A single production index or a selection of production indices is called for by the standard to track GDP. The index that is relevant in a country will depend on its economic structure.
Periodicity:	Monthly (or as relevant)
Timeliness:	Six weeks (one month encouraged, or as relevant)

Forward-looking indicators

Coverage:	The standard encourages dissemination of relevant forward-looking indicators such as surveys of expectations, surveys of orders (e.g., for manufactured products), or composite indices.
Periodicity:	Monthly or quarterly
Timeliness:	One month or one quarter

Labour market

Coverage:	Employment, unemployment, and wages/earnings are called for, as relevant. The standard does not prescribe a definition for this category or its components, but encourages the use of the International Labour Office's (ILO) concepts, definitions and classifications.
Periodicity:	Quarterly
Timeliness:	One quarter

Price indices

Coverage:	Consumer price indices and producer or wholesale price indices are prescribed.
Periodicity:	Monthly
Timeliness:	One month

QUALITY MANAGEMENT BY STATISTICS CANADA¹

1. THE MANAGEMENT CONTEXT

This section outlines the management context within which these Quality Guidelines are applied. It draws together the various policies, managerial processes, consultative mechanisms, and technical procedures that have a bearing on the management of quality at Statistics Canada. While Section 2 focused mainly on the design of individual statistical activities, Section 3 provides a broader managerial and corporate perspective on quality assurance, while also referring to many of the same policies and procedures as Section 2. It provides a context for the quality guidelines contained in Section 2 and is based on Statistics Canada's Quality Assurance Framework (1997a).

1.1 Quality at Statistics Canada

Our product is information. The effectiveness of the organization depends on the relevance and credibility of that information. Relevance is maintained and enhanced in an environment of changing and expanding user requirements and expectations. The credibility of our information is based on the organization's reputation for reliable data and supported by all our products. Since few users can assess independently the reliability of the information we produce, our "name" is their continuing source of confidence. Therefore, a concern for quality must permeate all that the agency does.

The quality of statistical information is multidimensional. Quality embraces not only the attribute of relevance, but also the characteristics of accuracy, timeliness, accessibility, interpretability and coherence. Within and across statistical programs and products, quality also incorporates characteristics of consistency, compatibility and completeness. Each statistical product is itself multidimensional, containing a range of information that may vary in quality and serve many data uses. Across statistical programs there are differing objectives, priorities, constraints and opportunities, and thus differing quality characteristics. Quality is not something that should or can be maximized at all costs. The challenge of defining the agency's overall statistical program is to establish and maintain over time an appropriate balance between the quantity and the quality of the information yielded by that program with the resources available. The challenge of the design of individual statistical programs is to make the appropriate trade-offs among the evolving needs of clients, costs and respondent burden, and the various dimensions of quality.

Given the central importance of quality to the agency, the management of quality needs to be built into the management and technical practices of the Agency. It needs to be built into the design of individual programs and managed by these programs. Statistics Canada strives to build quality into all its programs and products. The quality of its official

¹ Statistics Canada Quality Guidelines, Third Edition - October 1998, Chapter 3

statistics is founded on the use of sound scientific methods, adapted over time to changing client needs, to budgetary circumstances, and to the changing reality that is the object of measurement. A concern for, and pride in, quality must be shared by employees and managers at all levels in Statistics Canada. Acceptable quality is not achieved by managerial actions, edicts and checks. It is achieved through understanding client needs and the sound application of knowledge and expertise at many levels. It requires motivated and competent human resources, and the effective development and management of these resources and their activities. To this end, Statistics Canada has in place a series of human resource programs, together with the policies, procedures, and guidelines needed to promote, facilitate, and fortify activities and behavior consistent with the agency's central concern for quality.

1.2 Organization and Infrastructure for Management of Quality

Statistics Canada is organized into three statistical program fields each encompassing specific subject matter groupings: a management services field, a statistical operations field, and a technical infrastructure (geography, technical classifications, informatics and statistical methods) field. Supporting these "functional" fields are internal management and subject matter committees, and consultative and professional advisory committees that have mainly external membership.

Each of the *management committees* is responsible for providing guidance, policies or management for a major function or responsibility across the agency. These include, for example, the Corporate Planning Committee, the Methods and Standards Committee, the Training and Development Committee, the Recruitment and Development Committee, and the Dissemination Committee. The primary management committee overseeing the activities of the agency is the Policy Committee.

The *subject matter committees* fulfill coordination functions across statistical programs to promote various aspects of quality within particular areas of subject matter, e.g., demography, labour statistics, aboriginal data, environmental statistics, and income and wealth. They focus on ensuring relevance and coherence, in part through promoting the use of common definitions and classification systems, and consistent and effective meta-data.

The *consultative committees* - the National Statistical Council, the Federal-Provincial Consultative Council on Statistical Policy and its subsidiary committees - provide advice on broad policy issues, priorities, data and user requirements, and output.

Thirteen *professional advisory committees* covering major subject areas provide an ongoing review of the agency's statistical output and methods and help set priorities within these areas.

The program fields are responsible for the implementation, management and review of mandated statistical programs. For development and redevelopment they implement and

manage programs through a matrix management process, using project teams. The program areas provide the professional subject matter (and some types of technical) expertise, and the infrastructure fields provide technical and operational expertise and services. Various components of the management services infrastructure provide direct or indirect support to these undertakings (e.g., human resources, financial, training, audit and program evaluation services).

The program manager, within the scope of the approved mandate of the statistical program, is responsible and accountable for the quality of the data and of the information produced through the statistical program. The technical infrastructure and the statistical operations fields are responsible and accountable for providing scientifically sound and efficient technical and operational methodologies, systems and operations.

These arrangements provide a number of checks and balances that serve to maintain sound and consistent statistical practices.

1.3 The Quality Assurance Framework

Unlike the users of most manufactured products, the users of statistical data are generally not in a position to assure for themselves the quality of the products they receive simply by examining, testing and using them. While the relevance and timeliness of statistical data may be immediately apparent to a user, other dimensions of quality, especially accuracy, cannot be deduced from inspection of the product alone. The producer of statistical data therefore needs to have in place quality management and measurement processes that can determine the major quality requirements, build these into the data, and then provide the user with sufficient information to assess the fitness of the data for its intended uses.

Quality management requires an understanding of the potential risks and opportunities that can affect quality, and the application of appropriate managerial and scientific methods to reduce these risks and take advantage of the opportunities. Among the potential risks are, for example, losing touch with client needs, declining respondent cooperation, budgetary constraint, and skill shortages. Potential opportunities include, for example, rapid advances in technology, advances in statistical methodology, and growing needs for informed policy analysis. Careful management can turn risks into opportunities - but vice versa too.

The Quality Assurance Framework (Statistics Canada, 1997a) documents the processes in place in the agency to manage quality, within the organizational structure, and in face of risks and opportunities recognized by the agency. These processes are in essence designed (a) to support sound and informed managerial judgements about the allocation of resources, and sound and informed technical judgements based on knowledge and expertise, and (b) to ensure that the operations that flow from these decisions are carried out with due regard for quality.

The elements of the Quality Assurance Framework are described under three broad headings: *Ongoing Assurance of Relevance*, *Design and Execution*, and *Environment*.

1.3.1 Ongoing Assurance of Relevance

The “*Relevance*” component embraces those processes that lead to the determination of what information the agency produces and the level of resources to be devoted to each program. It deals essentially with the translation of user needs into program approval and budgetary decisions within the agency. As the term used for this component suggests, the outcomes of these processes are the most significant determining factors in assuring the relevance dimension of quality for an individual statistical program, as well as across all programs.

The processes that are used to assure relevance also permit basic monitoring of other elements of quality and correspondingly assessment of user requirements for these. While taking into account that about 95% of the agency’s budgetary resources are devoted to ongoing programs that are non-discretionary, as well as the interdependency among the different programs, the agency has put in place processes that monitor the relevance of its existing programs, that identify new or emerging information gaps that the current program is not filling, and that lead to decisions on program change or new funding initiatives aimed at strengthening the relevance of the agency’s overall program. These processes can be described under four broad headings: client and stakeholder feedback mechanisms, program review, data analysis, and the planning process. The first three of these headings cover activities designed to obtain information and intelligence about client information needs, about the success of current programs in satisfying these needs, and about gaps and weaknesses in current programs. The fourth heading covers the process for deciding the changes to be made based on this information.

Client needs, however, are not only a matter of overall and individual program relevance. The other elements of quality also need to be satisfied. As part of the process of ensuring relevance and for making decisions through the planning process, it is important to assess and consider all elements of quality to be delivered. Part of this assessment is made by analyzing data outputs and reviewing processes with a view to recognizing and addressing deficiencies or inconsistencies, as well as by assessing achievements against costs.

1.3.2 Design and Execution

The “*Design and Execution*” component covers the design, conduct and evaluation of information production processes within the approved programs and subject to their budgetary constraints. Beyond establishing relevance and setting of priorities, the accuracy, timeliness, accessibility, and interpretability dimensions of data quality stem primarily from the design and execution of these processes.

In general, a project management and steering committee regime is used to ensure that

statistical programs are carried out according to their mandate. A mixture of functional and matrix management approaches ensures that the appropriate mix and quantity of resources and expertise are planned for and available to the project. Furthermore, it provides a mechanism to review, monitor and report on progress, problems and issues; and to ensure the proper interpretation of the mandate and objective, and that appropriate judgements are being made and implemented. The exact nature of practices will be a reflection of the size, relevance, complexity and nature of the program, as will the resources applied to it.

The use of an interdisciplinary project team/project management approach for design and implementation, supported by the functional organization, is important in ensuring that quality considerations receive appropriate attention. In particular, methodologists on project teams have an explicit responsibility to bring their expertise on data quality trade-offs to bear on the project. The fact that they are part of a specialized functional organization facilitates the full development of their expertise. It also permits calling on a variety of specialized resources and, when warranted, calling on the higher management of this organization to help resolve conflicts that could not be resolved within the project team.

The collection or acquisition, processing and compilation of data requires the use of sound statistical and analytical methods and models, effective designs, instruments, operational methods and procedures, and efficient systems and algorithms. The quality achieved - accuracy, timeliness and coherence - will depend on the explicit methods put in place and the quality assurance processes built in to identify and control potential errors at the various stages of the implemented program. The individual program managers have considerable flexibility in implementing specific practices and methods.

The definition and criteria for acceptable quality are left to the individual program to determine and justify within its circumstances, constraints, opportunities and objectives, and within the mandate approved by the Policy Committee. Whatever specific methods are applied, they need to be within the realm of commonly accepted and defensible statistical practices under the given circumstances. The use of new technologies and innovations to improve quality and efficiency is typically encouraged, but should be well tested to minimize risk. Questionnaires, in particular, must be tested to ensure that respondents can and will be willing to provide input data of acceptable quality. It is important to be able to monitor quality, react effectively to unanticipated problems and verify or support the credibility of the results, as well as understand their limitations. The specific practices and methods applied may change over time as a result of policy decisions or as a result of ongoing assessment by the individual programs.

At the design or redesign phase and as part of ongoing reviews, there are technical assessments of methods proposed or in place, as well as evaluations of operational effectiveness and cost performance. These serve as a test of the suitability of the technical proposals or practices. They also serve to improve and guide implementation of specific components of methodology and operations, within and across programs. Besides being used to inform and to describe statistical phenomena and to recognize data gaps, data

analysis is also a means to assess or to measure the accuracy and coherence of data. In this context, the results of analysis may lead to, for example, additional or modified data editing procedures, questionnaire design changes, supplementary data collection procedures, additional staff training, the adoption of new methods, procedures or systems, or to redesign.

The delivery of information and statistical products is the culmination of efforts to assure quality, as the products are finally conveyed to users. While all elements of quality are important to this stage, interpretability, coherence and accessibility play a critical role in the final quality of the information delivered.

1.3.3 Environment

The “*Environment*” component includes the corporate initiatives and processes designed to maintain within Statistics Canada an environment that encourages a concern for quality and the production of the best quality possible within operational and budgetary constraints. These measures include the recruitment of talented staff and their development to appreciate quality issues, an open and effective network of internal communications, explicit measures to develop partnerships and understanding with the agency’s suppliers (especially respondents), programs of data analysis and methodological research that encourage a search for improvement, and the development and maintenance of standard definitions, classifications, frameworks and methodological tools to support interpretability and coherence.

The three components of relevance, design and execution, and environment, although described separately, interrelate closely. For example, there is an important feedback loop between the evaluation activities under Design and Execution and decisions about investment in programs under Ongoing Assurance of Relevance.

While the framework serves the management and assurance of quality in a coherent manner, its elements were not introduced at a single point in time in an attempt to “manage quality.” It has evolved over time as part of the agency’s managerial and technical evolution and reflects the central role that quality concerns play in the management of a statistical agency. The specific elements in place are the result of a wide range of ongoing activities involving every level of the agency, as well as clients and stakeholders, “suppliers” and advisory groups.

It is one of the functions of project, advisory and management committees, as well as of the corporate and project planning processes to identify quality management issues, to identify and communicate “good practices” and to propose worthwhile initiatives that will promote quality.

1.4 Conclusion

Statistics Canada's quality assurance regime consists of a wide variety of mechanisms and processes acting at various levels throughout the agency's programs and across its organization. The effectiveness of this regime depends not on any one process but on the collective effect of many interdependent measures that build on the professional interest and motivation of the staff, and that reinforce each other with their attention to client needs, their emphasis on objective professionalism, and their concern for data quality. While any description of the overall regime inevitably appears to separate components, the important feature of the regime is the synergism resulting from the many players in the agency's programs operating within a framework of coherent processes and consistent messages.

References

Statistics Canada (1997a). An Outline of Statistics Canada's Quality Assurance Framework.

Unpublished report, Methods and Standards Committee, Statistics Canada.

Survey Data Quality Evaluation Guidelines¹

1. Focus analysis of user needs on finding the most cost-effective solutions for both the short and long term. Before embarking on design of a new statistical activity (or redesigning an existing one), analyze currently available statistics in the area in terms of sources, frequency, quality, timeliness, etc. Deal with the trade-off between adequacy of the available data to meet the requirements of clients and the cost and time required to undertake a new activity involving the production of statistics that do not already exist.
2. Develop survey objectives in partnership with important users and stakeholders. Establish and maintain relationships with users of information in the private and public sectors and with the general public to enhance the relevance of the information produced and as part of marketing products and services. Among important users are representatives of potential markets, policy makers and agents who require the information for legislated use. Before major designs or redesigns, routinely conduct extensive and focused user consultation so as to identify content options and also to develop public support for the program when it reaches the data collection stage. Since relevant and accurate statistics are not useful if they are not trusted, taking a very open approach when developing or revising programs is important.
3. In determining the extent to which a survey will meet user needs, seek a reasonable trade-off between these needs and the budget, response burden and privacy. Although the agency may have little discretion where a legal requirement is in place, in other cases it is worthwhile to formulate alternative methodological approaches, means and modes of data collection, frequencies, geographical details, etc. with a view to arriving at an optimum solution.
4. Review ongoing statistical activities at regular intervals. Statistical programs need to evolve, adapt and innovate so as to keep pace with the demands of the users they serve. The purpose of the activity or its statement of objectives needs to be reviewed periodically to enhance the relevance of the statistical product to user needs, which may be evolving or changing. Sometimes the overhaul of existing surveys may be desirable to maintain the reliability of key statistical series, especially if sources of information have changed or the way in which they are made available is reengineered or rethought.
5. Where explicit data quality targets exist, include them in the statement of survey objectives in terms of measurable aspects of quality. Targets can be set in terms of measures such as response rates, sampling error, coverage rates, and timeliness. With administrative data and derived statistical activities, quality of output will be directly related to the quality of inputs.

¹ Statistics Canada Quality Guidelines, Third Edition - October 1998

6. Managerial discretion is needed to determine the appropriate amount of data quality evaluation for a given statistical program or product. Factors to consider include the uses and users of the data, the potential for error and its significance to the use of the data, the variation in quality over time, the cost of the evaluation relative to the overall cost of the statistical program, the potential for improvement of quality, efficiency or productivity, the utility of measures to users and their ease of interpretation, and whether the survey will be repeated or not.
7. Data quality evaluations at Statistics Canada must be designed to meet the mandatory and minimum requirements of the Policy on Informing Users of Data Quality and Methodology. For censuses and survey data, the minimum requirements include a measure or a rating of coverage error, a response rate or imputation rate, and (in the case of sample surveys) measures of sampling error for key characteristics.
8. Supply a data quality rating based on expert judgment or subjective analysis when it is not possible for data quality evaluations to result in quantitative measures due to the nature of the data product, the specific user, or for reasons of timeliness, cost or technical feasibility.
9. Make planning of data quality evaluations part of the overall survey design, as the information needed to conduct such evaluations often must be collected during the implementation of the survey process.
10. For repeated surveys or statistical activities, it may not be necessary or feasible to undertake detailed quality evaluations on an ongoing basis. However such studies can be undertaken periodically, not simply when problems arise, to determine whether the activity is still meeting its objectives.
11. Involve users of the results, whether they are external or internal to the statistical agency, in setting the objectives for the data quality evaluation program. Where circumstances permit, also involve them in the evaluation process itself.
12. Consider using certification methods such as:
 - a. checks of consistency with external sources of data, for example from other surveys or from previous occasions of the same survey;
 - b. internal consistency checks, for example calculation of ratios that are known to lie within certain bounds (sex ratios, average value of commodities, etc.);
 - c. unit-by-unit reviews of the largest contributors to aggregate estimates, typically the case in business surveys;
 - d. calculation of data quality indicators such as nonresponse rates, imputation rates and coefficients of variation;
 - e. debriefings with staff involved in the collection and processing of the data;
 - f. “reasonableness” checks by knowledgeable subject matter experts, including pre-release external review in the form of “work in progress.”

13. Sources of error that can be considered for evaluation include the following:

- a. *Coverage errors*, which consist of omissions, erroneous inclusions, and duplications in the frame used to conduct the survey. Since they affect every estimate produced from the survey, they are one of the most important types of error. Coverage errors may cause either a positive or negative bias in the data, and the effect can vary for different sub-groups of the survey universe.
- b. *Nonresponse errors*, which occur when the survey fails to get a response to one, or possibly all, of the questions. Nonresponse causes both an increase in variance, due to the decrease in the effective sample size and/or due to the use of imputation, and may cause a bias if the non-respondents and respondents differ with respect to the characteristic of interest.
- c. *Measurement errors*, which occur when the response received differs from the "true" value, and can be caused by the respondent, the interviewer, the questionnaire, the mode of collection, or the respondent's record-keeping system. Such errors can be random in nature, or they can introduce a systematic bias into the results.
- d. *Processing errors*, which can occur at the subsequent steps of data editing, coding, capture, imputation and tabulation. Like measurement errors, processing errors can result in either a variance or a bias.
- e. *Sampling errors*, which occur when the results of the survey are based on a sample of the population rather than the entire population. In practice, these may also include *estimation errors*, which may be introduced due to the use of estimators that introduce biases, deliberately or otherwise, e.g., some small area estimators.

INDIA STATISTICAL STRENGTHENING PROJECT

RAJASTHAN POSITION PAPER

POSSIBILITY OF IMPROVEMENTS

1. Introduction

1.1 The Project

The Ministry of Statistics and Programme Implementation (MOSPI), Government of India, is implementing World Bank funded India Statistical Strengthening Project (ISSP). The long-term objective of ISSP is to help in implementing the proposal of the National Statistical Commission to “provide, within the decentralized structure of the system, reliable, timely and credible social and economic statistics, to assist decision making within and outside the Government, stimulate research and promote informed debate relating to conditions affecting people’s life”. The project is being taken up in two Tiers – Tier I comprising of exploratory activities and Tier II would comprise of activities that take place over a longer time frame.

The Tier I activities, inter alia, include a study to “**Identify the Specific Requirements for Strengthening of State Statistical Bureaus**”. The study is being conducted in two Phases. The objective of Phase I study is to document the status of data collection, processing and standards followed in each State, to assess the infrastructure and human resources available, and propose a position paper for each State for discussion at an All-India Workshop. A fully costed plan for upgrading each State Office will subsequently be developed by the Ministry of Statistics in Phase II and these plans will be implemented in Tier II of the project.

In Tier I, the existing statistical activities, particularly in the following areas were to be studied in relation to various parameters like base year, periodicity, timeliness, methodology, sample size, data volume, flow of information, etc. The receipt of statistical returns on statutory and non-statutory basis, concepts, definitions and procedures being used as well as data gaps, deficiencies and associated problems were also to be assessed.

1. State Domestic Product Estimates
2. Estimate of Capital formation and Savings
3. Estimates of District Domestic Product
4. Estimates of the contribution of local bodies
5. Data on major fiscal variables (Release of data on receipts, expenditure and fiscal balance in relation to the budget estimates on monthly, quarterly and annual basis)
6. Participation in the conduct of Annual Survey of Industries – Field survey, tabulation and pooling
7. Compilation of Index of Industrial Production
8. Crop area and production statistics
9. Compilation of Wholesale Price Index numbers
10. Compilation of Consumer Price Index numbers
11. Health, morbidity and mortality and family welfare statistics – infant mortality

and under 5 mortality by sex, maternal mortality, prevalence and death rates associated with malaria and tuberculosis by sex, and prevalence and rate of HIV/AIDS

12. Education and literacy statistics – adult literacy rate and enrolment ratio in primary education by sex
13. Labour and employment statistics (labour force and work participation rates by sex and proportion of women in wage employment in the non-agricultural sector)
14. Housing statistics – housing stock and additions to stock, investment in housing
15. Birth and death registration and population
16. Electricity production and distribution statistics
17. Environment and forest statistics (Land area covered by forests, protected land area, proportion of people with access to safe drinking water and improved sanitation)
18. Participation in the surveys of National Sample Survey Organisation (NSSO) – field survey, tabulation and pooling
19. Transport statistics – urban and rural road length, registration of vehicles, vessels and inland water transport equipment, passenger and goods transport by road
20. Statistics for local area planning – economic and social infrastructure, population distribution by age, sex, education, employment etc.

In addition to the above, the Tier I study required the Consultant to review and analyse the following aspects of the state's statistical system:

1. Organisational and functional structure
2. Availability and Use of IT tools
3. Mapping of resources and outputs in respect of each of the major data series/activities i.e .output vis-à-vis resources being used (men and machines) and quality parameters (timeliness, adequacy and reliability)
4. Prioritisation of outputs and impact assessment
5. Possibility of improvements in the high priority outputs/activities if some of the low priority outputs/activities are dropped or pursued with less frequency, quality, timeliness or details and the resources thus saved used on high priority items
6. Requirement of additional resources for the improvement of various activities/outputs

1.2 This Paper

This Paper relates to Rajasthan's statistical system. It is based on a study undertaken by Dr. N.K. Bhatnagar, Group Project Director in Group-II (comprising in addition, Shri B.V.L.N. Rao, the official statistics expert and Shri Ajaydeep Singh IT Expert).

This report builds on the Draft Report submitted to MOSPI in January 2006, and incorporates the suggestions made by (i) the Task Force and the State DES, and participants of the de-briefing Workshop held in Delhi on 14th February chaired by the Secretary, MOSP&I; and (ii) the Task Force meeting of 21st July 2006 that approved the Madhya Pradesh Report as the Model Report. The model of the Madhya Pradesh Report has been adopted for this Report in terms of structure and issues addressed and (iii) the Task Force meeting of 12th December 2006 that approved the Draft Final Report.

The comments of the DES Rajasthan vide their letter No F5(3)3/C/HDR/DES/04 dated 22nd January, 2007 have been incorporated in this report.

The Paper discusses the following aspects of the Statistical System of Rajasthan.

- The current statistical activities, the priorities assigned to those activities including possibilities of prioritisation.
- Possibility of producing current output with either better quality or by reducing use of resources
- Possibility of meeting principal data gaps in terms of minimum desirable level as per national standards
- Possibility of improving effectiveness of transmission of raw data within State and between State and the Centre
- Possibility of improving quality of data communication to various stakeholders, including the general public

2. Statistical Activities of Rajasthan

2.1 Statistical Activities at a Glance

The current statistical activities of Rajasthan's Statistical System, and the responsible department/ agency of the Government of Rajasthan are listed in Table 1 below:

Table 1: Overview of Statistical Activities in Rajasthan

SN	Activity	Agency/ Department Responsible	Base Year where applicable	Frequency of data collection	Periodicity of release of estimates	Year ¹ for which Data Available as of June 2006	Time Lag in Data Disseminatio n in Months
1	State Domestic product	DES	1993 - 94	Annual	Annual	FY2002-03	12-quick 24-provisional 36-Revised
2	Capital formation	DES	N.A.	Annual	Annual	Dept.: FY2003 - 04 NDCU - 1999- - 2000	Dept - 24 NDCU - 60
3	District Domestic Product	DES	N.A.	Annual	Annual	FY 2002-03	36
4	Contribution of Local Bodies	DES	1993 - 94	Annual	Annual	FY 2002-03	12-quick 24-provisional 36-Revised
5	Major fiscal data	Finance Dept. and DES	N.A.	Monthly	Annual	FY 2005 - 06	<1
6	Annual Survey of Industries	CSO/NSSO/ DES	N.A.	Annual	Annual	FY 2001-02	48
7	IIP	DES	1993-94 ²	Monthly	Monthly	March 2006	3
8	Crop area and production statistics	DES/Board of Revenue	N.A.	Annual	Annual	Area AY2004-05 Production- AY 2004-03	Area-12 Production-12
9	Wholesale Price Index	DES	1999-2000	Monthly	Monthly	January 2006	6

¹ FY – Fiscal Year ending March; CY-Calendar year ending December; AY – Agriculture Year ending June; EY – Education Year ending September

² Being revised to 1999-2000

SN	Activity	Agency/ Department Responsible	Base Year where applicable	Frequency of data collection	Periodicity of release of estimates	Year ¹ for which Data Available as of June 2006	Time Lag in Data Disseminatio n in Months
10	Consumer Price Index	Not compiled by the State DES					
11	Health, Morbidity, Mortality and family welfare statistics	Department of Health and Family Welfare	N.A.	Annual	Annual	CY 1999	72
12	Education and Literacy Statistics						
12 A	Institutional	Department of Education	N.A.	Annual	Annual	EY 2003-04	12
12B	Enrolment Data	Department of Education	N.A.	Annual	Annual	EY 2003-04	12
13	Labour and Employment Statistics						
13 A	Labour Statistics	Labour Commissioner	N.A.	Annual	Annual	CY 2001	48
13 B	Employment Statistics	Directorate of Employment & Training	N.A.	Annual	Annual	FY 2002 - 03	24
14.	Housing Statistics	Population Census/ Rajasthan Housing Board	N.A.	Decennial	Decennial	2001	36 months after Pop Census
15	Birth and Death Registration Statistics	DES	N.A.	Monthly / Annual	Annual	CRS: CY1999 SRS: CY2004 MCCD: CY1999	72: CRS 24: SRS 72: MCCD
16	Electricity Production and Distribution Statistics	Department of Power	N.A.	Prod – Daily Distribution- Monthly	Annual	FY 2004-05	12
17	Environmental Statistics						
17.A	Forestry Statistics	Conservator of Forest	N.A.	Annual	Annual	FY 2004-05	18
17.B	Water Supply and Sanitation Statistics	PHED	N.A.	Annual	Annual	FY 2004-05	12
18	Participation in National Sample Survey	DES/NSSO	N.A.	Annual	Annual	No tabulation done for several years	
19	Transport Statistics						
19.A	Motor Vehicle Registration	Transport Commissioner	N.A.	Monthly / Annual	Annual	May 2006	<1
19.B	Road Length	State PWD	N.A.	Annual	Annual	FY 2005-06	4
19.C	Road Accidents	Police Department	N.A.	Annual	Annual	CY 2004	12
19.D	Passenger and Goods Traffic	Passenger – RRTC	N.A. Not done	Annual	Annual	FY 2003-04	24
20	Statistics for Local Area Planning	DPC/DES	N.A.	Annual	Annual	FY 2002-03	24

2.2 Prioritization of Statistical Activities

2.2.1 Prioritization Criteria

Any prioritization exercise has to be underpinned by well articulated criteria. The current status of prioritization of statistical activities in the state is inferred through resource allocation, using the difference between optimum manpower required and current staff in place in the state. The Consultant has chosen the criteria of (i)

demand for statistical information; and (ii) current quality of statistical output. Using these criteria, we provide two options for prioritization of statistical activities. The rationale for using these criteria and the methodology of our assessment is discussed in this chapter. Prior to the discussion of the assessment of prioritization, the perspective of the State is presented.

2.2.2 Perspective of the State

As perceived by DES and line departments of the State, all the twenty core statistical activities are important and of equal priority as the outputs of each of the twenty statistical activities are critical for both macro and micro management of the state's economy through information and knowledge-based policy making and deciding on policy shifts as required by performance of economic indicators measured through the twenty core statistical activities.

2.2.3 Assessment of Current Priorities

The above notwithstanding, it is our assessment that a *de facto* prioritization has been done by the DES while allocating the available manpower resources to the twenty core statistical activities. Thus, we can use the distribution of manpower resources across the twenty core activities as an indicator of priority. Activities not undertaken have been assigned the last priority. The current priorities of the State vis-à-vis statistical activities of the State using the indicator of difference between optimum required staff (as estimated in Chapter 7) and current staff are as reported in Table 2 below.

Table 2: Current Priorities of Statistical Activities – Staff Allocation Based Assessment

SN	Statistical Activity	Responsible Agency	Staff			Inferred Priority
			In Place IP	Optimum Required OR	100*(OR-IP)/OR	
1.	State Domestic Product Estimates	DES	24	24	0	1
2.	Estimate of Capital formation & Savings					
3.	Estimates of District Domestic Product					
4.	Estimates of the contribution of Local Bodies					
5.	Data on major fiscal variables	Department of Finance and DES				
6.	Industrial Statistics – ASI and IIP	ASI: CSO/NSSO/DES	18	23	22	4
7.	Price Statistics – Collection of Prices for WPI and CPI	IIP: DES	9	11	18	2
8.	Health, Morbidity and Family Welfare Statistics	Department of Health and Welfare	269	354	24	5

SN	Statistical Activity	Responsible Agency	Staff			Inferred Priority
			In Place IP	Optimum Required OR	100*(OR-IP)/OR	
9.	Births and Deaths Registration Statistics	DES	16	37	57	6
10.	Participation in NSSO Surveys	DES/NSSO	18	23	22	3
11.	Crop Area and Production Statistics	DES/Board of Revenue	41	41	0	1
12.	Education and Literacy Statistics	Dept of Education	62	64	3	2
13.	Transport Statistics	Transport Dept, PWD, RRTC	8	11	27	5
14.	Forest	Forest Department	1	7	85	7
15.	Water and Sanitation ³	PHED				
16.	Housing ⁴	Rajasthan Housing Board/DES				
17.	Labour and Employment	Labour Department	5	5	0	1
18.	Statistics for Local Area Planning	DPC/DES	319	319	0	1

As will be seen from this Table, the current *inter se* priorities of statistical activities can be prioritized as follows:

Priority One

- State Income Statistics
 - a. State Domestic Product Estimates
 - b. Estimate of Capital formation & Savings
 - c. Estimates of District Domestic Product
 - d. Estimates of the contribution of Local Bodies
 - e. Data on major fiscal variables
- Crop Area and Production Statistics
- Labour and Employment
- Statistics for Local Area Planning

Priority Two

- Education and Literacy statistics

Priority Three:

- Participation in NSSO Surveys

³ Optimum manpower not estimated as it is proposed to have water and sanitation statistics collected through periodic sample survey.

⁴ Optimum manpower not estimated as it is proposed to have water and sanitation statistics collected through periodic sample survey.

Priority Four:

- Industrial Statistics

Priority Five:

- Health, Morbidity and Family Welfare Statistics

Priority Six:

- Births and Deaths Registration Statistics

Priority Seven:

- Forest Statistics

2.2.4 Demand-based Prioritization

Rationale: There is no gainsaying the fact that statistical information on economic (including agriculture and industry), social (health and education), urban development, and environment (forest, water supply and sanitation) is an essential requirement of policy makers and administrators in the state government for development planning, macro and micro management of the economy, and monitoring of several mission-oriented programmes. Equally important, such statistical information is required by the business community for developing and executing their business plans. And, demand for statistics also emanates from the research community and the multilateral donor agencies. Also, data on a number of parameters are required for monitoring progress vis-à-vis international programmes like the Millennium Development Goals to which India is a signatory. In view of the above, using demand for statistics as a basis for prioritization is justifiable.

Methodology: We have inferred the demand-based priorities on the basis of perceived demand (need) for statistics by policy makers, researchers and the business community. The demand (need) perceptions were derived from our consultations with select government officials and on the basis of our *a priori* understanding of need for data for both macro and micro management of the State's economy. The demand (need) for statistics has been categorized by us into high, medium, and low depending upon the criticality of statistics related to a given parameter for policy formulation, development planning, and macro and micro management of the State's economy.

Our suggestions are given in Tables 3 and 4 below:

Table 3: Demand Based Prioritisation of Statistical Activities

SN	Statistical Activity	Suggested Priority	Reason
1.	State Domestic Product Estimates	High	Critical parameters for macro management of the economy, and necessary inputs for development planning. Key indicator of growth. Perceived as early warning system for signaling policy shifts. Thus, high demand from planners, policy makers, IMF, World Bank, researchers.
2.	Estimate of Capital formation & Savings		
3.	Estimates of District Domestic Product		
4.	Estimates of the contribution of Local Bodies		
5.	Data on major fiscal parameters		

SN	Statistical Activity	Suggested Priority	Reason
6.	Annual Survey of Industries	High	Important as it provides data on various vital aspects of registered factories for use in the estimation of national income, studies of industrial structure and policy formulation on important indicators like number of factories, employment, wages, invested capital, capital formation, input, output, value added etc.
7.	Index of Industrial Production	High	Important as a measure of changes over time in the volume of industrial production.
8.	Crop Area and Production Statistics	High	Critical for food security related policy formulations, which are particularly important for arid and semi-arid agricultural zones, and monitoring interventions for overall increase in agricultural output. Thus, data in high demand by the Rajasthan Government, national and agricultural research system including CGIR institutions, particularly ICRISAT that is devoted to research on agricultural productivity in semi-arid tropics.
9.	Compilation of Wholesale Price Index Numbers	High	It is a measure of inflation and also, an important input for SDP estimation.
10.	Compilation of Consumer Price Index Numbers	High	There is a high demand for CPI in indexation of prices and for wage revisions.
11.	Health, Morbidity and Family Welfare Statistics	High	Data required for monitoring of progress in Rajasthan towards its health goals and those of MDGs to which India is a signatory. A vital input for strategizing realization of health for all goals set by the State Government and GoI. Required for compliance with data requirements of WHO and implementation of Health Policy of GoI
12.	Education and Literacy Statistics	High	Data required for monitoring of progress of investments made by Rajasthan to upgrade its education infrastructure. Also required for monitoring the State's progress towards MDGs to which India is a signatory. Requirements of regular monitoring of schemes and programmes directed at meeting the goals of universal education and hundred per cent literacy.
13.	Labour and Employment Statistics	High	Employment generation is one of the high priorities of both the national and state governments not only for sustainable livelihoods but to address other problems in the State, for example, emigration of agricultural labourers during periods of drought. For this, regular flow of data to

SN	Statistical Activity	Suggested Priority	Reason
			policy makers at the State and Central Government levels is critical.
14.	Housing Statistics	High	In the context of high rate of urbanisation in the state, and the government's current emphasis on enforcing building bye-laws and land use management, housing statistics has registered a high demand. Also, housing statistics are required by urban and local bodies to develop appropriate infrastructure, to establish a data base for user charges, to ensure planned urban development through appropriate land use zoning, and to plan for the meeting the national goal of housing for all within a stipulated time period. The JNNURM initiative is another source of demand for housing statistics that is expected to grow.
15.	Birth and death registration and population.	High	Monitoring of progress towards MDGs to which India is a signatory. A vital input for strategizing realization of health for all goals set by the GoI. Required for compliance with data requirements of WHO
16.	Electricity production and distribution Statistics	Medium	The state is a power deficit State and is faced with issues of augmenting power supply. For this the State needs a sound plan and strategy for power enhancement. This requires data; while soom good data is available, more is required.
17.	Environment Statistics	High	Rajasthan is faced with several environmental problems related to desertification, for example, the rapidly depleting ground water table that may create drinking water crisis in the State. Both the State and Central Governments have assigned a high priority to finding solutions to environmental impact of gradually increasing desertification of the State. This has led to a high demand for a comprehensive environmental database, which is most inadequate as of now.
18.	Water and Sanitation	High	Rapidly growing demand for water and sanitation statistics by the Government of Rajasthan, GoI, and multilateral agencies arising from serious water shortage in the State, and water sector reform initiatives.
19.	Participation in the surveys of National Sample Survey Organisation (NSSO).	High	NSS surveys meet the demand for disaggregated data with respect to policy formulation and analysis of several schemes under implementation for socio economic development, and for local level planning.

SN	Statistical Activity	Suggested Priority	Reason
20.	Transport	High	A well planned transport system is a vital necessity given the mushrooming growth of vehicles and the rising population in the main cities of Rajasthan. This warrants a comprehensive transport database covering all modes of transport, and the transport planners of the State have registered a high demand for a quality transport database.

Grouping of statistical activities in high, medium, and low priority categories is given in Table 4 below.

Table 4: Demand Based Prioritisation of Statistical Activities by High, Medium and Low Priority Categories

SN	High Priority	Medium Priority	Low Priority
1	State Domestic Product Estimates	Electricity production and distribution Statistics	
2	Estimate of Capital formation & Savings		
3	Estimates of District Domestic Product		
4	Estimates of the contribution of Local Bodies		
5	Data on major fiscal variables		
6	Industrial Statistics; ASI, IIP		
7	Crop Area and Production Statistics		
8	Compilation of Wholesale Price Index Numbers		
9	Compilation of Consumer Price Index Numbers		
10	Health, Morbidity and Family Welfare Statistics		
11	Education and Literacy Statistics		
12	Labour and Employment Statistics		
13	Housing Statistics		
14	Birth and death registration and population.		
15	Environment Statistics.		
16	Water and Sanitation		
17	Participation in the surveys of National Sample Survey Organisation (NSSO).		
18	Transport Statistics		

2.2.5 Quality Driven Prioritisation

Rationale: The rationale for quality-base prioritisation is derived from the imperatives of strengthening the overall statistical system of the state through efficient allocation of incremental resources with the caveat that the already high quality statistical activities are not deprived of their resource requirements i.e. low and medium quality statistical activities should not be strengthened at the cost of high quality activities.

The emphasis is on strengthening the statistical system as a whole rather than individual statistical activity – holistic rather than the Cartesian partial approach.

Methodology: The quality-based prioritization has been done on the basis of quality assessment of statistical activities using a methodology based on IMF DQAF that has been discussed above. The quality of statistical output has been assessed on a normative scale of high, medium, and low. After this we have prioritized the statistical activities by assigning high priority to low quality statistical activities. .

Our results are given in Tables 5 and 6 below:

The quality distribution of twenty core statistical activities in high, medium, and low categories is as follows:

Table 5: Quality of Statistical Activities

STATISTICAL ACTIVITY			
SN	High Quality	Medium Quality	Low Quality
1.	Data on major fiscal variables	State Domestic Product Estimates	Capital Formation and Savings Estimates
2.	Electricity Production and Distribution	Compilation of IIP	DDP Statistics
3.	Transport Statistics: Vehicle Registration and Road Length Statistics	ASI	Estimates of Contribution of local bodies
4.		Crop Area and Production Estimates	Education: Institutional Statistics Enrollment Statistics
5.		Compilation of WPI	Health, Morbidity and Family Welfare Statistics
6.			Labour Statistics and Employment Statistics
7.			Housing Statistics
8.			Transport: Passenger Traffic Statistics and Statistics on road accidents
9.			Birth and Death Registration Statistics
10.			Forestry Statistics and Water Supply Statistics
11.			Statistics for local area planning.

As our analysis reveals, four of the statistical activities undertaken by the State’s Statistical System are of high quality. Thus in terms of improving quality of statistical output these activities command a low priority. Likewise, the statistical output with low quality should be assigned high priority. The prioritisation of statistical activities from the view of improving quality is given in Table 6 below.

Table 6: Quality Improvement Driven Prioritisation

STATISTICAL ACTIVITY			
SN	High Priority	Medium Priority	Low Priority
1.	Capital Formation and Savings Estimates	State Domestic Product Estimates	Data on major fiscal variables
2.	DDP Statistics	Compilation of IIP	Electricity Production and Distribution
3.	Estimates of Contribution of local bodies	ASI	Transport Statistics: Vehicle Registration and Road Length Statistics
4.	Education: Institutional Statistics Enrollment Statistics	Crop Area and Production Estimates	
5.	Health, Morbidity and Family Welfare Statistics	Compilation of WPI	
6.	Labour Statistics and Employment Statistics		
7.	Housing Statistics		
8.	Transport: Passenger Traffic Statistics and Statistics on road accidents		
9.	Birth and Death Registration Statistics		
10.	Forestry Statistics and Water Supply Statistics		
11.	Statistics for local area planning.		

3. Possibility of producing current output with either better quality or with fewer resources

The issue of producing current output with either better quality or fewer resources is addressed against the backdrop of our assessment of current quality of statistical outputs and the current resources scenario. On the basis of these assessments (quality and resources) that are discussed at length below (3.1 and 3.2), we are persuaded to conclude as follows:

1. Improving data quality is very much within the realm of possibility. For this, actions as recommended in 4.1 need to be taken. And the statistical staff at all levels needs to be trained in statistical methods and operations, IT, and management of statistical system.
2. The State's Statistical System is not endowed with optimum resources – financial, manpower, and IT. The results of our resources (manpower and IT) analysis as given below clearly establishes that there are gaps in human resources and with respect to IT. This has persuaded us to conclude that it is not possible to produce current output with fewer resources.

3.1 Quality of Current Statistical Output

3.1.1 IMF Quality Indicators

There is growing acceptance to the use of the IMF's Data Quality Assessment Framework (DQAF) as a tool for assessing data quality⁵. For the purposes of the present study, an attempt has been made to broadly apply the DQAF methodology selectively – of the five quality dimensions specified in DQAF we have focussed on the accuracy and reliability dimension⁶.

3.1.2 Assessment of Quality of Statistical Output⁷

The reliability and accuracy indicators that are prescribed by IMF and used by us for assessment of quality of statistical activities are:

1. Adequate basis of the source/field data to compile statistics in terms of adequacy, comprehensiveness, approximation to definition, and timeliness
2. Regular assessment of source data for coverage, sample error, response error, and non sampling error
3. Use of sound statistical techniques in data compilation and statistical analysis
4. Assessment and validation of intermediate data and statistical outputs.
5. Tracking of revisions

In our quality assessment, we have assigned the highest value to (1), (2), and (4) above. This may be termed as threshold quality indicators. Three and five above have been assigned low values.

The quality of statistical output has been classified in three qualitative categories – high, medium, and low - in terms of the extent to which the three threshold indicators are satisfied. We have used the following normative scale to assess quality:

High Quality: All the components of the threshold indicators are met plus any one of (3) and/or (5)

Medium Quality: The three threshold indicators are met.

Low Quality: The threshold indicators are not met.

⁵ The IMF works with member countries in carrying out such assessments. Its Reports on the Observance of Standards and Codes (ROSC) have been helpful in identifying areas of strengths and weaknesses. The reviews look at particular aspects of data quality as defined in the DQAF framework. The assessment covers key data series that are of critical importance for sound macro-economic management. Typically, the reviews deal with statistical practices in the areas of the national accounts, prices, government finance, money and banking, and balance of payments statistics. Beyond a review of status of the series in question, the ROSC reviews deal with aspects of the institutional environment and organizational dimensions of the statistical regime.

⁶ The five DQAF quality dimensions are accessibility, serviceability, accuracy and reliability, methodological soundness, and assurance of integrity.

⁷ Activities not undertaken have not been evaluated

APPLICABILITY of IMF – DQAF STANDARDS

Though IMF – DQAF standards are not presently applicable to the state, however, to improve the quality of statistical outputs, it is necessary that the current statistical activities being carried on should be benchmarked against the best practices.

The assessment of quality of statistical activities given in the table on next page is based on the information obtained and presented in Section 4.1 of Chapter 4 of main report and the discussions of the consultants with the State Statistical Officials.

S.No	STATISTICAL ACTIVITY/ OUTPUT	Table 7 : QUALITY OF STATISTICAL OUTPUTS													
		Reliability and Accuracy													Timeliness: Time Lag in Release of Data in Months
		Source Data: Adequate Basis to Compile Statistics				Regular Assessment of Source Data for coverage, sample error, response error and non-sampling error	Sound Statistical Techniques		Assessment and Validation of Intermediate data and Statistical Outputs			Tracking of Revisions		Overall Assessment of Reliability and Accuracy	
		Adequacy	Comprehensive	Approximate to Definition	Timely		Data Compilation	Statistical Analysis	Against other Information	Statistical Discrepancies Assessed and Investigated	Statistical Discrepancies in statistical outputs investigated	Studies and analyses of revisions	Studies and Analyses made public		
1.	State Domestic Product Estimates	√	√	√	x		√	√	x	√	√	√	√		
2.	Estimate of Capital formation & Savings	x	√	x	x	X	√	√	x	√	x	x	x	Low	24:SDUs 60: NDCUs
3.	Estimates of District Domestic Product	x	√	√	x	X	√	√	x	x	x	x	x	Low	36
4.	Estimates of the contribution of Local Bodies	x	√	√	x	x	√	√	x	x	x	x	x	Low	12-quick 24- provisional 36-final
5.	Data on major fiscal variables	√	√	√	√	√	√	√	√	√	√	√	√	High	< 1
6.	ASI	√	√	√	x	x	√	x	√	√	√	√	x	Medium	48
7.	IIP	√	√	√	x	√	√	x	√	√	√	√	x	Medium	3
8.	Crop Area	√	√	√	x	x	√	√	x	x	x	√	√	Medium	30
8.1	Crop Production	√	√	√	√	√	√	√	x	x	x	√	√	Medium	30
9.	Compilation of WPI	√	√	√	x	√	√	x	√	√	√	√	x	Medium	6
10.	Compilation of CPI	NOT DONE													
11.	Health, Morbidity and Family Welfare Statistics	x	x	√	x	x	√	√	x	x	x	x	x	Low	72.
12.	Education:														
12.1	Institutional Data	√	√	√	x	x	√	x	x	x	x	x	x	Low	12
12.2	Enrollment	x	x	√	x	x	√	√	√	x	x	x	x	Low	12

S.No	STATISTICAL ACTIVITY/ OUTPUT	Table 7 : QUALITY OF STATISTICAL OUTPUTS													
		Reliability and Accuracy													Timeliness: Time Lag in Release of Data in Months
		Source Data: Adequate Basis to Compile Statistics				Regular Assessment of Source Data for coverage, sample error, response error and non-sampling error	Sound Statistical Techniques		Assessment and Validation of Intermediate data and Statistical Outputs			Tracking of Revisions		Overall Assessment of Reliability and Accuracy	
		Adequacy	Comprehensive	Approximate to Definition	Timely		Data Compilation	Statistical Analysis	Against other Information	Statistical Discrepancies Assessed and Investigated	Statistical Discrepancies in statistical outputs investigated	Studies and analyses of revisions	Studies and Analyses made public		
13.	Labour	x	x	√	x	x	√	√	x	x	x	x	x	Low	48
13.1	Employment	x	x	√	x	x	√	√	x	x	x	x	x	Low	24
14.	Housing Statistics	x	x	√	x	√	√	x	√	√	√	√	x	Low	Census: 36 months after Census Housing Board: 6
15.	Birth and death registration and population.	x	x	√	x	x	√	√	x	x	x	x	x	Low	72: CRS 24: SRS 72: MCCD
16.	Electricity production and distribution Statistics	√	√	√	√	√	√	√	x	√	√	√	√	High	12
17.	Environment and Forest Statistics.	x	√	√	√	x	√	x	x	x	x	x	x	Low	18
17.1	Water Supply and Sanitation	x	√	√	x	x	√	√	x	x	x	x	x	Low	12
18.	Participation in NSSO surveys - Field survey, tabulation and pooling	Data of state samples have not been tabulated as yet and reports not published excepting isolated reports based on manual tabulation. Hence not evaluated for quality													

S.No	STATISTICAL ACTIVITY/ OUTPUT	Table 7 : QUALITY OF STATISTICAL OUTPUTS													
		Reliability and Accuracy													Timeliness: Time Lag in Release of Data in Months
		Source Data: Adequate Basis to Compile Statistics				Regular Assessment of Source Data for coverage, sample error, response error and non- sampling error	Sound Statistical Techniques		Assessment and Validation of Intermediate data and Statistical Outputs			Tracking of Revisions		Overall Assessme nt of Reliability and Accuracy	
		Adequacy	Comprehensive	Approximate to Definition	Timely		Data Compilation	Statistical Analysis	Against other Information	Statistical Discrepancies Assessed and Investigated	Statistical Discrepancies in statistical outputs investigated	Studies and analyses of revisions	Studies and Analys es made public		
19.	Transport: <i>Vehicle Registration</i>	√	√	√	√	√	√	√	√	√	√	x	x	High	<1
19.1	<i>Road Length</i>	√	√	√	√	√	√	√	√	√	√	x	x	High	4
19.2	Passengers carried by RSRTC	√	√	√	√	x	√	√	x	x	x	x	x	Low	24
19.3	Road Accidents	x	x	√	x	x	√	√	x	x	x	x	x	Low	24
20.	Statistics for local area planning	x	√	√	√	x	√	√	x	√	√		x	Low	24

3.2 Resources Scenario

3.2.1 Human Resources

3.2.1.1 Overview – Available and Required Human Resources (Statistical)

- Total available manpower is 823 at the DES and Line Departments
- Total Estimated optimum manpower is 952
- Total additional required manpower is 129
- Activities with resource gaps are Health and Family Welfare Statistics and Education and Literacy Statistics
- Activities for which no staff are assessed are recommended are housing statistics, water and sanitation Statistics.⁸
- Activities with surplus staff are none.

Table 8: Over view of Staff Scenario – Head Quarter level

SN	Activity	Available Staff	Optimum Requirement	Staff Resource Gap
1.	SDP, DDP, CF&S, C of LB's	24	24	0
2.	Industrial Statistics – ASI, IIP	18	23	5
3.	Crop Area and Production statistics	41	41	0
4.	Price Statistics – WPI and CPI	9	11	2
5.	Health, Family Welfare	269	354	85
6.	Education and Literacy Statistics	62	64	2
7.	Labour and Employment	5	5	0
8.	Housing Statistics	0	0	0
9.	Registration of Births and Deaths	16	37	21
10.	Forestry	1	7	6
11.	Water and Sanitation Department	0	0	0
12.	Participation of NSSO Surveys	18	23	5
13.	Transport Statistics	8	11	3
14.	Statistics for Local Area Planning	319	319	0
15.	Staff posted across activities	33	33	0
Total		823	952	129

3.2.2 Available Manpower Resources

The available manpower resources in DES, and Line Departments as of 7th November 2006 is given in the tables below.

⁸ The recommended mode of data collection in case of Housing and Water and Sanitation statistics is adhoc sample surveys

Table 9: Statistical Manpower in DES and in Line Departments

SN	Location	Staff Numbers
1.	Directorate of Economics & Statistics	129
2.	Line Departments	694
	Total	823

Table 10: Sanctioned V/s filled up Statistical staff (As on 07-11-2006)

S.No.	Name of Post	State Head Quarter			District Statistical Offices		
		Sanctioned H.Q.	Number Working	Post Vacant	Sanctioned DSO's	Number Working	Post Vacant
1.	Director	1		1			
2.	Joint Director	3	3				
3.	Deputy Director	5	5				
4.	Assistant Director	5	3	2			
5.	Statistical Officer	4	3	1	32	21	11
6.	Analyst Cum Programmer	1		1			
7.	Programmer	1	1				
8.	Assistant Account Officer	1	1				
9.	Chief Legal Assistant	1	1				
10.	Office Superintendent	1	1				
11.	Office Assistant	8	8				
12.	UDC	17	16	1	08	06	2
13.	LDC	20	20		26	26	
14.	Sr. Personal Assistant	1	1				
15.	Personal Assistant	4	4				
16.	Stenographer	6	6				
17.	Steno-Typist	1	1				
18.	Accountant	1	1				
19.	Junior Accountant	2	2				
20.	Statistical Assistant	66(2)A ¹	66(2)A		98(3)A	94(3)A	4
21.	Statistical Inspector	17	17		79(3)A	51(3)A	28
22.	Computer	31(7)A	16(7)A	8	30(7)A	13(7)A	17

¹ A = Abeyance

S.No.	Name of Post	State Head Quarter			District Statistical Offices		
		Sanctioned H.Q.	Number Working	Post Vacant	Sanctioned DSO's	Number Working	Post Vacant
23.	Librarian	1		1			
24.	Assistant Librarian	1	1				
25.	Junior Artist	2	2				
26.	Jamadar	1	1				
27.	Class IV Worker	30	30		43	41	2
28.	Machine Operator	1	1				
	Total	233(9)	211((9)	15	316(13)	252(13)	64

Table 11: Activity wise Staff in Position

Sl.No.	Activity	Statistical Assistant	Statistical Inspector	Computer	Total
1	Agriculture & TRS	9	0	2	11
2	Prices	4	0	2	6
3	ASI	3	0	1	4
4	State Income	11	4	0	15
5	Vital Statistics	10	1	2	13
6	Human Development Report	11	0	4	15
7	NSS	12	4	0	16
8	DDP	0	3	2	5
9	Economic Census	2	3	0	5
10	Publication	1	0	0	1
11	Training	1	0	0	1
	Total	64	15	13	92

Table 12: Department wise distribution of Common Statistical Cadre Manpower – In Position

S.No.	Name of the Department/Office	Director	Joint Director	Deputy Director	Assistant Director	Statistical Officer	Total
1	Planning Department	3	1	8	4	7	23
2	Directorate of Economics & Statistics	1	3	4	4	4	16
3	Department of Agriculture Census	1	-	-	1	1	3
4	Department of Panchayati Raj	1	-	1	-	2	4
5	Department of Women & Child Development	-	1	-	-	-	1
6	Department of Irrigation	-	1	-	-	1	2
7	Finance Division (Ajmer)	-	-	1	1	-	2
8	Social Welfare Department	-	-	1	-	1	2
9	DPIP	-	-	3	1	1	5
10	SC/ST Welfare Department (Udaipur)	-	-	2	1	-	3
11	SC/ST Welfare Department (Jaipur)	-	-	1	-	-	1
12	Chief Minister's Office	-	-	1	-	-	1
13	Ministry of Industries	-	-	1	1	-	2
14	Department of Commercial Taxes	-	-	1	-	-	1
15	S.N. Department	-	-	1	-	-	1
16	Department of Science & Technology	-	-	1	-	-	1
17	Rajasthan Health System Development Project	-	1	-	-	-	1
18	Department of Health Services	-	-	1	-	3	4
19	Department of Animal Husbandry	-	-	1	-	-	1
20	Irrigation Department (Bikaner)	-	-	1	-	-	1
21	Education Department	-	-	1	-	-	1
22	Office of the Chief Planning Officer	-	-	15	-	1	16
23	KSA	-	-	3	-	-	3
24	Department of Cooperation	-	-	-	1	-	1
25	Commercial Taxes (Jaipur)	-	-	-	1	-	1
26	Department of Food & Civil Supplies	-	-	-	1	-	1
27	Department of Tourism	-	-	-	1	-	1

S.No.	Name of the Department/Office	Director	Joint Director	Deputy Director	Assistant Director	Statistical Officer	Total
28	Department of Mines & Geology (Udaipur)	-	-	-	1	-	1
29	Transport Department	-	-	-	1	-	1
30	Disaster Management & Control (Jaipur)	-	-	-	1	1	2
31	Department of Ayurveda	-	-	-	-	1	1
32	Directorate of Census (Jaipur)	1	-	1	-	1	3
33	Forest Department	-	-	-	-	1	1
34	District Statistical Office	-	-	-	-	21	21
35	RUIDP (Jaipur)	-	-	-	-	1	1
36	Department of Urban Development	-	-	-	-	1	1
37	Swarnajayanti Urban Employment Scheme	-	-	3	4	-	7
38	Economic Policy & Reform	-	-	1	-	1	2
39	ML Verma TRI (Udaipur)	-	-	1	-	-	1
40	Directorate of Continuing Education (Jaipur)	-	-	-	1	-	1
	Total	7	7	54	25	49	142

3.2.3 IT Resources

The available and required IT hardware and software resources in DES and select line departments is given below in Tables 13-16

Table 13: Available and Required Hardware at the DES Head Quarters

SI No	Particulars	Available	Required	Net Requirement	Approx Unit ⁹ cost (Rs.)	Approx Total Cost (Rs.)
1.	High end server	-	1	1	1,00,000	100000
2.	FTP/E-Mail/ Web Proxy Server	1	1	1	80,000	80000
3.	Desk tops	27 ¹⁰	114	87	35,000	3045000
4.	GIS Workstation	-	1	1	80,000	80000
5.	Plotter	-	1	1	1,20,000	120000
6.	Laser and DMP printers	8	8	0	50,000	0
7.	Ink Jet Printers	4	4	0	5,000	0
8.	Scanners	-	2	2	6,000	12000
9.	Lan(wired/wireless)	-	1	1	50,000	50000
10.	LCD Projector	-	1	1	1,40,000	140000
11.	Lap Top	-	1	1	1,00,000	100000
12.	UPS – 5 KVA ¹¹	-	1	1	90,000	90000
13.	UPS – 500 VA	-	114	114	3,000	342000
14.	DAT Drive – Back UP	1	1	0	30,000	0
15.	Back up – Low end	-	1	1	4,000	4000
16.	Computer Furniture	-	114	114	4500	513000
					Total	4676000¹²

Table 14: Available and Required Software by DES

SI No	Particulars	Available	Required	Net Requirement	Approx Unit Cost ¹³ (Rs.)	Approx Total Cost (Rs.)
1.	Windows 2000 Server	-	2	1	25,000	25,000
2.	Anti – Virus	-	1	1	30,000	30,000
3.	RDBMS	-	1	1	1,00,000	1,00,000
4.	SPSS/STATA	-	1	1	1,00,000	1,00,000
5.	Data warehousing s/w		Optional			

⁹ Price taken for calculations is the street price as on October 11, 2006, at New Delhi

¹⁰ Older 286 machines are not reckoned as they are obsolete

¹¹ The existing UPS is 2 KVA

¹² The following costs have to be factored in , Annual maintenance costs @ 12-15% of Hardware value every year , Hard ware upgrades @ 20% of Hardware value every year and Solid cell batteries @ 20% of UPS, Site Hosting Charges @ Rs.10,000/- Per year.

¹³ Price taken for calculations is the street price as on October 11, 2006, at New Delhi

SI No	Particulars	Available	Required	Net Requirement	Approx Unit Cost ¹³ (Rs.)	Approx Total Cost (Rs.)
6.	Encryption s/w		Optional			
7.	Back up and disaster recovery s/w		Optional			
Total						2,55,000¹⁴

Table 15 - Ideal IT Infrastructure of DSO

SI No	Particulars	Quantity	Approx Unit cost (Rs.)	Approx Total Cost (Rs.)
1.	Server – Low end	-	1,00,000	1,00,000
2.	Desk tops	5 ¹⁵	25,000	1,25,000
3.	Dot Matrix Printer	1	40,000	40,000
4.	Ink Jet Printer	1	4,000	4,000
5.	Photostat Machine	1	2,50,000	2,50,000
6.	Air Conditioner	1	25,000	25,000
7.	Computer tables	5	2,000	10,000
8.	UPS – 3 KVA	1	70,000	70,000
9.	UPS – 500 VA	5	3,000	15,000
10.	LAN – (wired/wireless)	Set	50,000	50,000
11.	Back UP – DAT	1	30,000	30,000
12.	Optional Software	1	50,000	50,000
13.	Windows 2000 server s/w	1	25,000	25,000
14.	Anti virus s/w	Set	20,000	20,000
15.	RDBMS	1	1,00,000	1,00,000
16.	Total approx costs for one DSO			9,14,000
17.	Total approx costs for thirty two DSO's			2,92,48,000

Table 16 - Requirements of IT - Hardware resources in the Line Departments

SI No	Particulars	Available Quantity	Additional Requirement	Approx Unit cost (Rs.)	Approx Total Cost (Rs.)
Board of Revenue¹⁶					
1.	Desk tops	-	2	35,000	70000
2.	Ink Jet Printer	-	1	4,000	4000
3.	Dot Matrix Printer	-	1	60,000	60000
4.	UPS – 500VA	-	2	4,000	8000

¹⁴ MS office programs are assumed to be acquired pre-loaded with the new hardware and hence no separate provision is made

¹⁵ There are some DSO's with old machines and others with no machines, , therefore five machines are recommended on an incremental basis

¹⁶ The Board of Revenue has two Celeron TM PCs with Printer for processing Crop Estimation Survey data and the Rainfall data, further the Agriculture Department has computers up to sub-district level duly net worked up to the State level

SI No	Particulars	Available Quantity	Additional Requirement	Approx Unit cost (Rs.)	Approx Total Cost (Rs.)
5.	Anti virus	-	1	30,000	30000
6.	CD Writer	-	1	5,000	5000
	Sub Total				177000
	Directorate of Family Welfare¹⁷				
	Directorate of Public Health				
7.	Desk tops	-	2	35,000	70000
8.	Ink Jet Printer	-	1	4,000	4000
9.	Dot Matrix Printer	-	1	60,000	60000
10.	UPS – 500VA	-	2	4,000	8000
11.	Anti virus	-	1	30,000	30000
12.	CD Writer	-	1	5,000	5000
	Sub Total				177000
	Directorate of Primary Education				
13.	Desk tops	-	2	35,000	70000
14.	Ink Jet Printer	-	1	4,000	4000
15.	Dot Matrix Printer	-	1	60,000	60000
16.	UPS – 500VA	-	2	4,000	8000
17.	Anti virus	-	1	30,000	30000
18.	CD Writer	-	1	5,000	5000
	Sub Total				177000
	Department of Labour				
19.	Desk tops	-	2	35,000	70000
20.	Ink Jet Printer	-	1	4,000	4000
21.	Dot Matrix Printer	-	1	60,000	60000
22.	UPS – 500VA	-	2	4,000	8000
23.	Anti virus	-	1	30,000	30000
24.	CD Writer	-	1	5,000	5000
	Sub Total				177000
	Forest Department¹⁸				
25.	Desk tops	-	3	25,000	75,000
26.	UPS – 500VA	-	3	4,000	12,000
27.	Laser BW Printer	-	1	60,000	60,000
28.	Back up DAT		1	30,000	30,000
29.	Anti virus		1	30,000	30,000

¹⁷ The Directorate is computerized and there are PCs at sub divisional level duly networked with the central server and the networked printer with facilities for on line information. The software is provided by the NIC under an MOU.

¹⁸ The Department is computerized fully with facilities for video conferencing and networking with the Conservator of Forests in the ranges. But no IT tool is used for statistical work, and compilation and tabulation of data is mostly done manually.

SI No	Particulars	Available Quantity	Additional Requirement	Approx Unit cost (Rs.)	Approx Total Cost (Rs.)
30.	RDBMS		1	50,000	50,000
				Sub Total	2,57,000
	Transport Department¹⁹				
	Total				9,65,000

Table 17 - Total estimated costs for IT Infrastructure for DES and Line Departments

Details	Approximate costs (Rs.)
Requirements of IT - Hardware resources in the DES Head Quarters	46,76,000
Requirements of IT - Software resources in the DES Head Quarters	2,55,000
Requirements of IT – Hardware/ Software resources in the DSO’s offices	2,92,48,000
Requirements of IT – Hardware/ Software resources in the Line Departments	9,65,000
Total	3,51,44,000

3.3 Possibility of Producing Current Output with Better Quality

Our assessment of the possibility of producing current output with better quality is based on our quality assessment using the IMF Data Quality Assessment Framework explained above.

As seen from Table below the distribution of the statistical activities in high, medium, and low categories is as follows²⁰:

Table 18: Quality of Statistical Activities

STATISTICAL ACTIVITY			
SN	High Quality	Medium Quality	Low Quality
1.	Data on major fiscal variables	State Domestic Product Estimates	Capital Formation and Savings Estimates
2.	Electricity Production and Distribution	Compilation of IIP	DDP Statistics
3.	Transport Statistics: Vehicle Registration and Road Length Statistics	ASI	Estimates of Contribution of local bodies
4.		Crop Area and Production Estimates	Education: Institutional Statistics Enrollment Statistics
5.		Compilation of WPI	Health, Morbidity and Family Welfare Statistics

¹⁹ Registration of vehicles is on line. The Department has a full-fledged Computer Centre connected to their District Offices who provide on line data to the Centre. Processing of data is done on PCs in the Commissionerate.

²⁰ The following statistical activities have not been evaluated for quality; ASI, IIP, WPI, and CPI (activities not undertaken); statistics for local planning (secondary data); housing statistics (secondary data).

STATISTICAL ACTIVITY			
SN	High Quality	Medium Quality	Low Quality
6.			Labour Statistics and Employment Statistics
7.			Housing Statistics
8.			Transport: Passenger Traffic Statistics and Statistics on road accidents
9.			Birth and Death Registration Statistics
10.			Forestry Statistics and Water Supply Statistics
11.			Statistics for local area planning.

The quality of data can be improved by addressing their key weaknesses through technical and managerial solutions.

3.3.1 Some Technical solutions to enhance Quality

1. Improvements and modification in methodology, as required.
2. Ensuring that source data are obtained from comprehensive data collection programmes and are timely
3. Routine assessment of source data for coverage, non response error, sample and non sampling errors
4. Validation of intermediate results including validation against other information as applicable
5. Assessment of intermediate data in terms of statistical discrepancies.
6. Strengthening supervision, compilation, scrutiny, and validation processes
7. Establishing and adhering to data dissemination standards
8. Ensuring that periodicity and timeliness follow dissemination standards as established in consultation with CSO
9. Ensuring that timeliness follows the scheduled calendar of activities.

3.3.2 Managerial Solution for Quality Enhancement

Given the central importance of quality to the State's Statistical System, and the fact that most of the twenty core statistical activities have been evaluated to be of low quality using IMF's DQAF, the management of quality must be built into the management and technical practices of DES and the line departments. Quality management should be built and mainstreamed with the design of individual statistical activities and programs. For this DES needs to develop appropriate policies, procedures, and guidelines to promote, facilitate, and fortify activities and behavior consistent with the concern for quality.

3.4 Possibility of Producing Current Output with Fewer Resources

The State's Statistical System is not endowed with optimum resources – financial, manpower, and IT. The results of our resources (manpower and IT) analysis as given above clearly establishes that there are gaps in human resources. This has persuaded us to conclude that it is not possible to produce current output with fewer resources.

4. Possibility of meeting principal data gaps in terms of minimum desirable level as per national standards

The State's statistical system is challenged by a number of data gaps as indicated in the Table below

Table 19: Key Data Gaps

SN	Statistical Parameter	Data Gaps
1.	GSDP Estimates:	Data gaps with respect to estimation of GSDP are several including: consumer price index; statistics on bye-products of agricultural and livestock products; index of agricultural production; expenditure data on new constructions and repairs of residential buildings; transportation of own products of ancillary activities ²¹ .
2.	Estimate of Capital formation & Savings	Savings are not estimated and data on actual addition to fixed assets not available; it is available only for gross assets, which do not satisfy the definition. The data provided by organizations engaged in mining, construction, and cooperatives are not comprehensive. Further, data base required for physical and financial indicators in many sub-sectors is inadequate, which makes it difficult to use benchmark figures. In a number of cases, data on type of assets is not available, so estimates by type of assets cannot be attempted for the supra-regional and private sectors. Latest data in some of the sectors is not available as a result of which data has to be moved with the help of some suitable indicators.
3.	Contribution of Local Bodies	Expenditure of local bodies on outsourced services and activities is not provided by the Local Bodies to DES.
4.	Compilation of Consumer Price Index Numbers	Not compiled
5.	Health, Morbidity and Family Welfare Statistics.	Data is not available on percentage of children fully immunized.
6.	Education and Literacy Statistics	For literacy rates and adult literacy rates, the source is decadal population census. For intermittent years the rates are not available for the State.

²¹ Data on unregistered manufacturing sector, agriculture sector, and livestock is available every five years from quinquennial surveys.

SN	Statistical Parameter	Data Gaps
7.	Labour and Employment Statistics.	<i>Employment Statistics:</i> Employment data is not available in respect of agriculture and allied occupations in the private sector, and household establishments.
8.	Housing Statistics	Construction activities with respect to rural and semi rural areas are not captured in housing statistics.
9.	Forestry Statistics.	<i>Forestry Statistics:</i> Inadequate data on forest regeneration, social forestry, and consumption/sale of forest produce.
10.	Transport Statistics	No data is generated on several transport related parameters like transport of passengers by private sector transporters, rental of commercial vehicles with operator, maintenance and repair of road transport equipment, supporting services for road transportation services, services auxiliary to all modes of transport, cargo-handling services, storage and warehouse services, among others.

The major data gaps observed in various statistical activities of Rajasthan have been highlighted above. There is every possibility of closing these principal data gaps through appropriate technical and resource (manpower and IT) enhancement measures as discussed below. The reasons for data gaps are well known and so are the solutions. The real issue is not whether the gaps can be closed or not but at what cost and over what time frame.

While particular attention should be paid to filling up the data gaps in respect of those activities that have been rated as medium and low quality, data gaps in respect of high quality outputs also need to be closed. In addition, data gaps arising from new demands for statistics arising from the 73rd and 74th Constitutional Amendment, requirement of data for monitoring MDGs, among others, also need to be closed.

The following measures – not exhaustive - are suggested for closing data gaps in respect of some of those statistics that are of paramount importance with respect to economic management, equitable social sector development, and for complying with international protocols that India has entered into and which require substantive state level inputs.

4.1 Technical Measures for Meeting Data Gaps

4.1.1 SDP & DDP

As suggested by the CSO DES should initiate type studies for updating ratios / rates in agriculture and allied fields as well as to include new emerging income generating areas like horticulture and floriculture. These studies should be taken up on a priority basis so as to enable the DES to fill up data gaps in SDP and DDP estimates. The quality of estimates of SDP suffers in terms of accuracy and reliability on account of applying old ratios to current data set. For example, old ratios / rates relating to agriculture and

livestock as supplied by the CSO are used in computation of SDP as these ratios have not been updated either by the CSO or the State.

4.1.2 Health Statistics

Data on Hospitals/Dispensaries, PHC, Subcentres, number of Doctors, is available with the Directorate of Health Services. But data on Birth Rates/Death Rates/IMR are not available due to inefficiencies in working of the Civil Registration Scheme. Since the existing efficiency of the Civil Registration is low, the Registrar General is operating SRS in the state, which provides reasonably reliable estimates of BR/DR/IMR at the state level. The scheme requires a randomised selection of villages and urban blocks, where concerted efforts are made to ensure registration of the vital events. This should be subsequently checked through Half Yearly Surveys to ensure identification of all vital events in the selected village/Block. It is proposed that DES should select, on random basis, additional villages and urban blocks, in all the districts, and conduct half yearly survey only, on a same pattern, as is done under SRS. Through intensive probing and supervision, number of vital events in the selected village/urban block should be identified. The half yearly survey should be coterminous with the period for SRS. The number of vital events identified through the proposed state sample could be merged, district wise, with the central SRS, and thus district wise BR/DR and IMR could be worked out. This would be a new activity for the state.

4.1.3 Undertaking New Activities for Strengthening the Statistical System

The following new activities are suggested. These activities are important not only from the perspective of enriching the coverage and quality of GSDP estimates, but also in terms of generating critical data for macro management of the State's economy, as well as formulation of progressive socio-economic policies.

4.1.3.1 Type Studies

DES should undertake type studies to update the rates and ratios used for estimation of GSDP, DDP and other income statistics.

4.1.3.2 Housing Statistics

Given the rapid urbanization in the state and the programme of urban renewal to be undertaken under the Jawaharlal Nehru National Urban Renewal Mission, it is critical to generate data on housing including construction activities and other urban assets for use by policy makers both at the state and centre levels. It is equally important to have a single window for all housing statistics to improve access to housing data by users.

Two activities are proposed. First, DES should become a depository of all housing statistics. For this, DES should annually collect complete housing statistics from all agencies involved in housing like Community & Rural Development, Housing Board, Urban Development Department, and Local Bodies periodically, so as to have housing

statistics at one place. This task could be assigned to the Official Statistics Division of DES.

Second, DES should undertake periodic sample surveys of housing including construction activities to assess addition to housing stock including the socio-economic profile of owners of housing stock. This task could be assigned to the Economic Survey Division of DES.

4.1.3.4 Poverty Statistics

The World Bank has advocated the need for developing a comprehensive statistical system for generating poverty statistics to provide the required data for both national and international interventions for poverty reduction and promoting sustainable livelihoods. Thus, an important aspect of data collection and analysis in Rajasthan should be the ability of the statistical system to generate information pertaining to people below the poverty line. The guidelines for poverty statistics developed by the UN Special Project on Poverty Statistics should be considered for adoption for developing a framework and methodology for poverty statistics.²²

4.1.3.5 Environmental Statistics

Rajasthan is faced with several environmental problems related to desertification, for example, the rapidly depleting ground water table that may create drinking water crisis in the State. Both the State and Central Governments have assigned a high priority to finding solutions to environmental impact of gradually increasing desertification of the State. This has led to a high demand for a comprehensive environmental data base, which is most inadequate as of now. DES should undertake this activity and develop a sound environmental statistical base by creating a data base based on the needs of the policy makers, the environment activists, and the international community. The data base should address the environmental statistical requirements arising from the need for environmental decisions on the following, among others:

1. Air quality – outdoor and indoor
2. Ozone Layer Protection
3. Noise
4. Waste
5. Water
6. EA & Planning
7. Strategic Environmental Assessment
8. Conservation
9. Energy Efficiency and Conservation
10. Renewable Energy
11. Environmental monitoring

²² Handbook on Poverty Statistics: Concepts, Methods and Policy Use, Special Project on Poverty Statistics, United Nations Statistics Division, December 2005

4.1.3.6 Gender Statistics

The current decade has witnessed some very important developments in the women's onward march towards equality with men. During last couple of years, the focus has decisively shifted from welfare of women to empowerment of women, which has been recognised as the key factor for bringing about improvements in the status of women. To reflect the status of women in the contemporary Indian society and its concern towards their emancipation, monitoring of various socio-economic indicators, which are integral to the empowerment of women, has assumed greater significance.

4.1.3.7 Tourism Statistics

A detailed database on tourism is required to facilitate formulation of tourism development strategy and plan. While data is available on tourist arrivals, there is inadequate data on tourists' expenses, employment generated in the tourism sector, and tourist profiles by origin and sex, among other parameters. DES should initiate activities to close these data gaps.

4.1.3.8 Service Sector Statistics

The services sector is growing rapidly in Rajasthan and is contributing significantly to State's income. It is, therefore, important factor in the service sector's income in estimation of State Income Statistics. DES should take the initiative in structuring a structure, system and action plan for collection and compilation of service sector statistics.

4.1.3.9 Compilation of CPI

The compilation of Consumer Price Index should be undertaken as there is a high demand for CPI in indexation of prices and for wage revisions.

4.2 Ensuring Adequate Manpower, IT, and Infrastructure Resources

As discussed above, DES has significant deficits with respect to manpower, IT, and infrastructure resources, which adversely impact on statistical activities. These deficits need to be eliminated by providing adequate manpower resources as indicated above (2.2). The recommended additional manpower will be required for undertaking activities to bridge data gaps, strengthen collection and compilation of source data, data scrutiny and validation, among other critical tasks like timely data dissemination.

Equally important is the need to strengthen IT infrastructure for data compilation, tabulation, report generation and other activities. This will not only improve the accuracy and reliability of data but also reduce the time lags in release of processed and final estimates. Moreover it will speed up the transmission of raw data from the field to DES using electronic modes of communication. As is well known, electronic compiling, tabulation and processing of data is critical for ensuring accuracy of data as well as its timely release and dissemination. Equally important is IT's role in networking and

establishing strong communication links within DES and with (i) the State's line departments; (ii) the National Statistical Organisation (NSO) and all its subordinate offices; (iii) all Central Ministries with substantial statistical output; (iv) all State Directorates of Economics and Statistics (DESs); and (v) the National Sample Survey Office and its Survey Design and Research Division, Data Processing Division, Field Operation Division and Coordination and Publication Division, among others. Accordingly, we recommend that DES should be provided with a robust IT infrastructure using an integrated architecture linking all stakeholders – the three Phases of State government, CSO, NSSO, DESs of other States/UTs, among others like ISI - through IT-based communication network.

The physical infrastructure of DES needs improvements so that they have functional office space with an employee friendly work environment that permits smooth interaction among staff and offers connectivity to DES headquarters and line departments.

5. Improvements in the Effectiveness of Transmission of Raw Data

The issue of improvements in effectiveness of transmission of raw data needs to be addressed at two levels – the quality and form of the transmitted data, and the mode of transmission.

5.1 Quality and form of Raw Data

Generally raw data flow from field staff to controlling officer at block / district / State level through prescribed format / return / on a periodic or ad hoc basis. The collection of raw/source data suffers from a number of inadequacies. Some of these inadequacies are:

- (i) Unskilled manpower
- (ii) Weak supervision; in some cases there is no supervision
- (iii) Manual compilation
- (iv) Manual tabulation
- (v) Near absence of scrutiny and validation
- (vi) Inadequate coverage

The above inadequacies are primarily a result of untrained human resources for field level operations. This results not only in delays in transmission of raw data, but also in errors creeping in source data that is transmitted from the field to the higher echelons of the State's Statistical System. And this in turn adversely impacts on accuracy and reliability of the final statistical output.

Thus, to improve the effectiveness of transmission of raw data it is imperative to take steps to address the above inadequacies. This not only requires deployment of required optimum resources for source data collection, but also establishing systems and mechanisms for fail-safe supervision for data collection and compilation, scrutiny, and validation.

5.2 Mode of Data Transmission

In the absence of adequate IT infrastructure with networking and communication capabilities, raw data is transmitted to the concerned department/officer through normal post, telephone message, or hand-delivery. The transmission mode is selected on the basis of urgency.

The effectiveness of transmission of raw data can improve only if this is done electronically. The Consultant has recommended a robust IT infrastructure for the State's statistical system with a configuration of hardware, software, and networking and connectivity protocols for, among others, facilitating transmission of raw data. The State Government is encouraging use of IT, and DES is keen to acquire a sophisticated IT infrastructure. Once this infrastructure is in place together with the EDP with trained staff, it will be possible to improve the effectiveness of transmission of raw data.

6. Improving Quality of Data Dissemination

6.1 Current Scenario

In Rajasthan, the only mode of data dissemination is formal publications, some of which are priced, and most of which do not adhere to a calendar of publications. Data is seldom provided on a request basis unless requests emanate from a government department/agency.

IMF's Special Data Dissemination Standard (SDDS).²³ specifications for data dissemination in terms of coverage, periodicity and timeliness are given in Table 20 below.

Table 20: Basis of IMF Special Data Dissemination Standard

Coverage:	The categories and components that are most important in shedding light on macroeconomic performance and policy. The standard identifies for each of the four sectors of the economy (i) a comprehensive statistical framework; (ii) data that permit frequent tracking of the principal measures in the framework; and (iii) other data relevant to the sector.
Periodicity:	the frequency of compilation--daily, weekly, monthly, etc.
Timeliness:	the maximum lapse of time between a reference date (or close of a reference period) and dissemination--for example, one month.

The evaluation of data dissemination indicates that a number of actions are required to improve dissemination. Some of these are:

²³ The GoI is a signatory to the SDDS protocol and is striving towards meeting these standards for national level statistics..

1. Improvements in coverage, periodicity, and timeliness. We recommend that the SDDS specifications, to the extent feasible, be adopted and enforced by Rajasthan's statistical system so that its data dissemination is mainstreamed with the national efforts to meet SDDS requirements
2. Making data easily accessible
3. Introducing electronic mode of data dissemination.
4. In order to reduce the time in printing of statistical publication, the departments may be allowed to engage the services of government approved private printing firms/establishments.
5. To enhance people's perception about integrity of disseminated data, it would be important for DES to disseminate technical notes concerning methods, concepts, and data limitations
6. Reaching out to data users, both in the government and the nongovernmental sectors, represents another area requiring attention. A modest start can be made by inviting key users to participate in short seminars hosted by DES at which the role, functions, and challenges faced by DES could be expounded. Such seminars would serve three broad purposes: (a) develop closer relationships with users; (b) serve as a forum for receiving user feedback, and (c) remove common misconceptions about particular statistical series, e.g. the data on consumer and retail prices, etc.

7. Possibility of Improving Capital Stock of Computing Equipment, Human Skills and Physical Facilities

7.1 Capital Stock of Computing Equipment

The current capital stock of computing equipment is grossly inadequate. The requirements of quality, timeliness and integrity of statistical outputs warrants improving the capital stock of computing equipment. This is certainly possible provided the required resources as given in Table 21 are provided.

Table 21 – Resources Required for Improving the Capital Stock of Computing Equipment

Details	Approximate costs (Rs.)
Requirements of IT - Hardware resources in the DES Head Quarters	46,76,000
Requirements of IT - Software resources in the DES Head Quarters	2,55,000
Requirements of IT – Hardware/ Software resources in the DSO's offices	2,92,48,000
Requirements of IT – Hardware/ Software resources in the Line Departments	9,65,000
Total	3,51,44,000

7.2 Human Skills Improvement

Having adequate staff is a necessary pre-requisite for improving data quality in terms of adequacy/coverage, accuracy, reliability and timeliness. But this is not a sufficient condition. Generation of quality data requires skilled staff. As noted above, most of the current statistical staff is deficient in statistical skills both at the operational level – routinised methods of data collection, processing and summarisation – and statistical methods to improve the practice of statistics, that is, use of “applicable theoretical techniques”. The latter deficiency is of particular concern as the statistical staff is not fully conversant with “applicable theoretical techniques”. Further, DES does not have adequate capabilities to tabulate data on demand and to analyse data from different sources. It is thus imperative for DES to have a detailed training programme to upgrade the staff skills in the two broad areas as given above.

To bridge the current skills gap, DES should focus on designing the training content and the mode of training. Some suggestions in this regard are given below.

We suggest that DES should develop a training programme focussed on the following distinctive areas and linked with the on-going and planned statistical activities:

1. Induction training course for all new statistical staff
2. Training for middle level staff
3. Refresher training programmes for all officers
4. Specialized training programmes to develop a core group of specialists who can also serve as trainers
5. Management of Statistical System

Induction Training: All new statistical staff should be given an induction training, preferably after an initial period of six months to one year. The induction training modules should include the following, among others:

1. An overview of the National and State Statistical Systems
2. Basic economic, social sector, and local area planning statistics
3. Fundamentals of national accounting
4. The role of sample surveys, censuses, administrative data in a statistical system
5. Management of statistical programs – data flow, coordination etc. – including
6. Planning, budgeting, organizational principles
7. Use of standard computer packages and data presentation

Training for Middle Level Staff: As the middle level staff play a critical role in execution of statistical activities, it needs to be formally trained to enhance their productivity and efficiency. Given the functions of middle level staff, they should be trained in the following areas, among others:

1. Techniques of data validation and verification
2. Use of standard computer packages in data editing and tabulation

3. Interview techniques in household surveys
4. Database maintenance and other core operations.

It is further suggested, that training should be supplemented by special training associated with particular surveys and statistical computations so as to get hands-on training. It is suggested that the above training be provided by DES and line departments to their staff who have the responsibility for generating source and field level data. The responsibility for the preparation of training materials should be assigned to the CSO so as to maintain uniformity of standards across all States and Union Territories. The training module should preferably be interactive making use of computer assisted instruction techniques.

Refresher Training Programmes: Periodic refresher training programmes should be periodically conducted for all the officers and staff of DES. Refresher training could be conducted in house in collaboration with CSO and focus on the following areas, among others:

1. Principles of economics
2. System of national accounts
3. Time series analysis and forecasting
4. Classificatory analysis
5. Techniques of pooling NSS Central and State Sample data;
6. Information technology
7. Geographical information system

Specialised Training Programmes: It is suggested that specialised training be provided in the following areas, among others:

1. Statistical Methods
2. Advanced Statistical Methods/Techniques
3. Survey Methods and Data Collection
4. Data Processing
5. Data Tabulation
6. Data Analysis
7. Data Management
8. Report Preparation

Specialised training should be provided through nationally organized courses, for example by the CSO. However, some key professional staff may be sent abroad to be trained in new and advanced statistical methods and approaches. This could be through study tours and participation in overseas courses or through courses and seminars delivered by foreign experts or a combination of the two approaches. The staff thus trained should be used as part time specialist trainers.

Management of Statistical System: To improve the management of the State's Statistical System, it is imperative for DES Director and functional heads within DES to have a thorough understanding of the role and functioning of a modern statistical system so that

appropriate reform measures, as required, are planned and initiated. It is suggested that courses in the following areas are developed and organised:

1. Management principles
2. Project planning and management in the context of overall priorities with respect to Statistical activities and operations.
3. Financial management
4. Human resource management

Training in IT

To enhance the IT skills of DES staff, the following areas of training are suggested in the Table below:

Table 22 : Suggested Areas of Training in IT

SN	Title	Duration	Frequency	Description
1	Computer Orientation - Basic	1 week	Regular	Introduction / refresher with concepts, terms, Introduction to MS Office, particularly to MS Word & MS Excel and Email usage. To be taken by all Group A, B and C personnel except support staff like drivers etc.
2	Computer Orientation - Advanced	1 week	Regular	Computer Usage – Level 2 course. With advanced features of MS Word & MS Excel, Presentation skills, Internet usage skills, introduction to a statistical package like SPSS. 10 to 20 % of the staff should undergo this training every year
3	RDBMS – Basics	2 weeks	Request	Grade B & C. Basics of Access and Oracle
4	RDBMS – Advanced	2 weeks	Request	EDP staff
5	Statistical Analysis – SPSS	1 – 2 weeks	Request	All staff in data analysis and interpretation.
6	Hardware Troubleshooting	1 week	Limited	2 per office
7	GIS - ArcInfo	As per vendor	Request	GIS
8	Software development – Microsoft Technologies – Basic		Request	Visual Basic, VBA; system design
9	Software development – Microsoft Technologies – Advanced		Request	.NET; associated courses; system analysis; documentation requirements

SN	Title	Duration	Frequency	Description
10	Website development usage		Request	Tools like Flash, Cold Fusion, Go Live, Dreamweaver etc.;
11	Data warehousing and mining		Request	Storage; tools; concepts; optimisation
12	Data center maintenance		Request	For EDP staff, Administrative tasks, backup and archival tasks and procedures; system log maintenance; etc.

Training Infrastructure

The implementation of above training related suggestions will require an appropriate training infrastructure to be developed. It is suggested that the DES be provided with an adequate training infrastructure. Also, the DES should draw on the expertise in the ISI, Delhi and Calcutta.

7.3 Physical Facilities

The physical facilities of DES need to be upgraded through provision of office space, vehicles and IT infrastructure including networking and connectivity. The details are given below.

Office Building for the DES Head Quarter

At present the head office of the DES is housed at Yojana Bhawan, Tilak Marg, Jaipur, this premises is adequate for the purposes of the Directorate in the short term future.

Office Building for the DSO's

All the 32 District Statistical Offices are located in the Collectorate offices at the district headquarters. Though in terms of access to other District Level Organizations , the location is very good, but in terms of adequacy of the office space commensurate with the current and proposed activities of the DSO's they are inadequate. It is estimated that one DSO will require an average of 1850 square feet.

Vehicles

The State Head Quarters requires two vehicles and none of the 32 DSO's have been provided with a vehicle. Thus a total of 34 vehicles will be required.

Office Automation Equipment

There is need for one photostat machine and one fax machine at the DES headquarters and in each of the 32 DSO's. Keeping in view the average temperatures of Rajasthan a water cooler is also recommended in each of the DSO's.

Power Back Up and Air-conditioning equipment

One self starting generator and four air conditioners at the DES HQ and one air conditioner for each of the 32 DSOs should be provided.

Estimated Costs: Summary of the costs for the improvements in the physical facilities is listed in the table below.

Table 23: Estimated Cost for Strengthening Physical Infrastructure

SSN	Particulars	Approx unit Cost Rs. Lakhs	Number of Offices/units	Amount in Rs. Lakhs
1.	Building for DSO's	18.50	32	592.00
2.	Vehicles	4.50	34	153.00
3.	Photostat Machines	.80	34	27.20
4.	Water Dispensers	.10	34	3.40
5.	Self-Starting Generator	6.00	1	6.00
6.	Air conditioners	0.25	36	9.00
7.	Office furniture	.50	32	16.00
Total				806.6