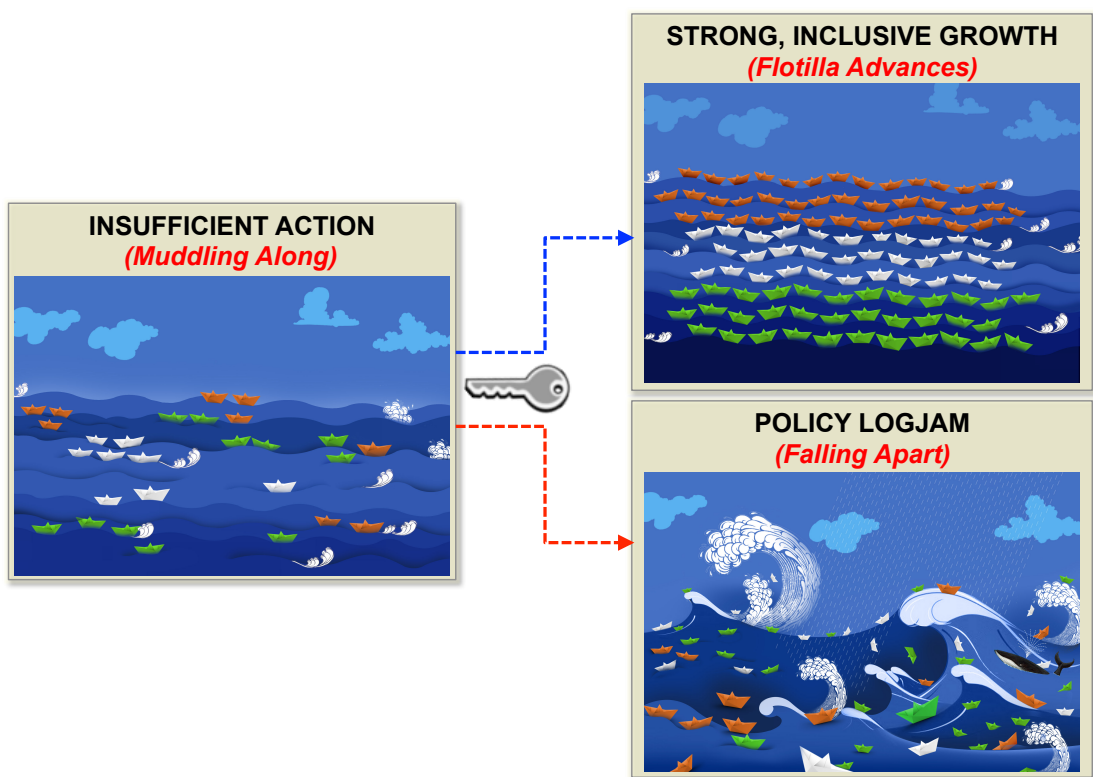




Scenarios: Shaping India's Future



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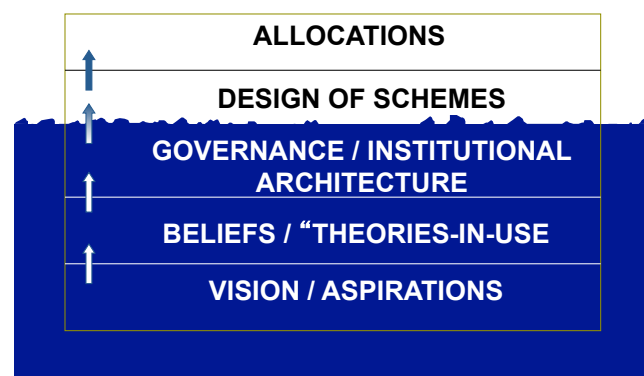
Introduction: Scenarios, Turning Points, Directions

Two questions are being asked with increasing frequency both in India and around the world. Is our pattern of economic growth sustainable? And, is our pattern of growth fair? It is clear that a new approach is required for human development and societal progress. If the prevalent “theories-in-use” to define progress, manage development, and govern societies continue, the risks to the environment and to social harmony are very large.

The 12th Plan and Scenarios for India

Planning in India was required to be a participative process, with inputs from the people. However, each five-year plan seemed to drift further away from the language and concerns of people into the realms of economic numbers and financial budgets. Therefore, it has become necessary to adjust the method of planning, to connect planners more strongly with people.

The figure below illustrates the various tiers of planning. Most of the time, discussion is “above” the waterline—allocations and design of schemes. What is more important is “below” the waterline.



Navigating the ship versus fitting out the cabins

The purpose of “scenario thinking” is to project “what if”. What if we do not change our underlying theories-in-use about progress and governance? Alternatively, what if we begin to adopt alternative theories. Scenarios are projections of plausible outcomes of alternative courses of action. They can help us choose the strategies that produce the outcomes we want. Scenarios enable dialogues, which in turn lead to agreements. Therefore, a team of Indians with diverse backgrounds has developed scenarios to facilitate new, collaborative conversations, amongst citizens and policy-makers, about India’s future. This effort was aided by the Center for Study of Science, Technology and Policy (CSTEP), who developed the conceptual scenarios model into a more robust systems dynamics model. Several readers of the original Scenarios expressed an interest in seeing the quantitative outcome of the

scenarios. In response, the National Council of Applied Economic Research (NCAER) was commissioned to create a macroeconomic model. Even by the first five-year milestone in the long horizon of the scenarios, the model already shows stark differences in GDP growth, fiscal deficits and other measures among the various scenarios. The findings of the NCAER model are included in this document.

Reforms in the processes of governance, administration and implementation are the need of the hour, and the Plan has been drafted with these imperatives in mind. The Twelfth Plan has incorporated 'scenario planning' for the first time, presenting the three scenarios from this report, and recognizing that development and growth outcomes will depend on the extent to which we are able to take difficult decisions.

A group of enthusiastic Young Professionals at the Planning Commission volunteered their time to examine the Plan document and distil key initiatives from each Chapter that support these strategies to lead to the desired outcomes. These recommendations in the Plan document are thus directly seen to connect to the strategies outlined in the Scenarios document. Each of these identified initiatives is grouped under the specific lever of impact outlined in the Scenarios document viz., Inclusion, Governance and Sustainability. These initiatives advocate greater focus not only on infrastructure and human capital investments, but also on specific sectors which have the greatest potential to provide large scale employment, so that India can successfully reap its much-vaunted 'demographic dividend'. This compilation is included in this document to aid the effective communication of the message: What is the Plan seeking to achieve? What are its underlying strategies? How is it proposing to implement these through the various wings and programmes of government?

The Prime Minister (and Chairman of the Planning Commission), Dr. Manmohan Singh, while asking the Planning Commission to reform itself, has directed it to become a "systems reforms commission" and an "essay in persuasion". Scenarios explain the reforms to the system—the "theories-in-use" and the "policy-matrix"—required to produce faster, more rapidly inclusive, and more sustainable growth. However, people must understand the fundamental shifts in policy required and support them, and press the political system for change. Thus, scenario planning is a complement to the traditional planning process, and represents an innovation made in the 12th Plan.

The System Model

The relationship between the fundamental forces that emerges from our systems analysis is presented in the diagram below.

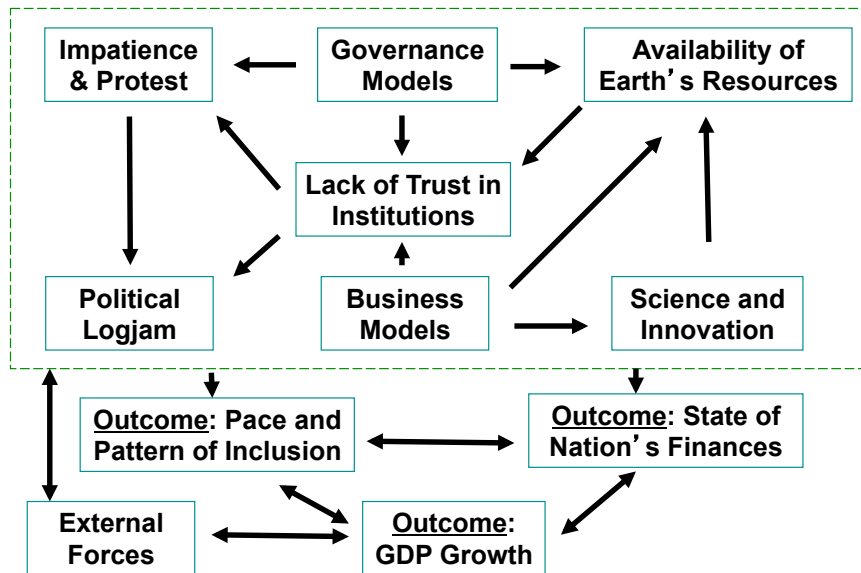


Figure: Root Causes and Leverage Points

The analysis locates the leverage points: the forces that affect the condition of all others. These lie in the design of institutions and are seen in the middle of the diagram. The architecture of governance impacts trust in institutions of government and large business. Business models have a direct effect on science and innovations, which in turn impact the sustainability of the earth's resources. Lack of trust in institutions increases impatience in society, leading to a political logjam, which makes reforms that the system needs more difficult.

The condition of the system, and its ability to reform itself will determine the pace and pattern of inclusion in growth. It will also affect the state of the nation's finances. Therefore, predictions of GDP growth rates must be related to the condition of the system and the social, political, and institutional forces within it, which are often treated as exogenous to economic growth models. Finally, the condition of external factors that impact India's progress is not easy to forecast. Therefore, the most important question for the country's policy-makers must be: what strategy will ensure that the country will be best placed regardless of these external uncertainties? Not surprisingly, India will be most secure in times of uncertainty if it is internally cohesive and strong. Therefore when the world around is changing, the Plan for India must concentrate even more on institutional reforms within.

Three Forks in the Road to the Future

Many of the strong forces that will shape our future, like the demographics of India and the spread of communications with new technologies, are “givens”. However, other forces that will strongly shape our future are not necessarily givens. The future shape of the system—the quality of the inclusion as well as the financial condition of the economy—will depend on the choices we make.

Like an X-ray, the systems’ analysis shows a deeper pattern. When we make certain choices, many other forces that depend on them will also go accordingly. And, when they go another way, another “scenario” altogether can emerge. It is not surprising that the three fundamental forces located by the systems’ analysis that can shape India’s future are about approaches to development and governance

A. The approach we take to “Inclusion”: the What and the How of inclusion?

A principal challenge for economists and policy makers all over the world has become how to achieve “Inclusion” along with economic growth. Two contending approaches are evident. One emphasizes “redistribution”: taking from those who have more, and giving to those who do not have enough. The other approach emphasizes creating more access to opportunities, so that the less well-off can increase their incomes faster and also contribute to growing the pie. At one extreme, the emphasis is mostly on “handouts”. At the other extreme is a very determined effort to generate more opportunities for livelihoods and to provide all sections of society with access. Scenarios can project the consequences, of choosing one course rather than the other.

B. The approach we take to “Governance”: will we strengthen local, community based, and collaborative governance rapidly?

When systems seem to be “not in control”, the instinct is to centralize. However, if the reasons for the results not coming faster are that the diversity in the system is very large and therefore solutions must be locally adapted, and that there is not a capable center, then it may be best to strengthen local governance rather than try to impose central control. The need to break across the silos and create convergence has been recognized.

At one extreme, the way most things are run is, in effect, “central” and “silo-ed”. At the other, local rural and urban governments are effectively in charge of their affairs with vigorous participation of local citizens. In a devolved structure with power closer to where results are required, and with different parts of the system working collaboratively, adaptation and learning are faster too.

C. The “theory-in-use” towards energy and environmental solutions (as well as enterprises): big projects, or more community-based solutions and enterprises?

Local and smaller solutions can create more ownership and responsibility for the use of resources and also ensure more equity in distribution of benefits. The argument against this theory is that scale is required for more efficiency. Innovations in networked enterprise designs can enable the benefits of both, local ownership, as well as the benefit of scale where required. On one end, big is good is the dominant paradigm. At the other end, only small is beautiful.

Each scenario is a description of the system it describes (the country in this case) if forces play out, or are caused to play out, in one way rather than another. Internal consistency requires that implausible combinations of directions of the forces are not considered. The India scenarios described in this document are constructed around the leverage points in the more fundamental forces explained above. They are derived from an analysis of all the critical forces identified in the scenario process. Thus, the scenarios are comprehensive, and internally consistent, descriptions of different States of the country’s future.

Three Scenarios of India’s future

The system analysis reveals three scenarios of India. They can be described under the headings of Insufficient Action (or “Muddling Along”), Policy Logjam (“Falling Apart”), and Strong, Inclusive Growth (“The Flotilla Advances”). These scenarios result from three different configurations of the three “theories-in-use” outlined previously.

Scenario 1: Insufficient Action (*The Flotilla Muddling Along*)

This is the scenario of India where the system is crying for reform, and some reforms are initiated. However, these are piecemeal, do not address core governance issues, and therefore are not effective. Centralized government systems struggle with demands for decentralization. Small enterprises are sought to be encouraged, but the agenda of big business dominates. The policy conflict between subsidies and financial stability of the economy remains unresolved.

The picture

The many diverse communities that compose our nation (class, caste, region, etc.) can be imagined to be sailing in ships in a flotilla on a sea that is often rough. The sea they are navigating through is the external global and national environment, and the increasing stress

on the earth's resources. The flotilla would like to move faster but is slowed down because the ships are unable to keep together.

The sea has become more turbulent. The ships are not talking often enough for all to collectively decide on their direction. At the same time, the engines and navigation systems of the ships (their institutional capabilities and governance models) have not been updated to suit the more turbulent environment so they are not able to travel faster and to coordinate quickly with the flagship.

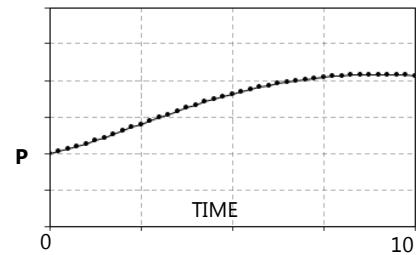
Often, one ship moves ahead faster than the others, but it has to wait impatiently for the laggards to catch up. Sometimes a storm separates the individual ships and it is difficult to bring them back into the flotilla and on course. Other countries' flotillas in contrast seem to stay closer together and are able to maintain a higher average speed.

The explanation

As the government engages in piecemeal reforms, some positive feedback loops are created within the system. A shift away from subsidies, allows for some more education and employment opportunities. Hopes rise, but since the progress is not fast enough, impatience also increases the pressure to ease poverty by subsidies and handouts also continues.

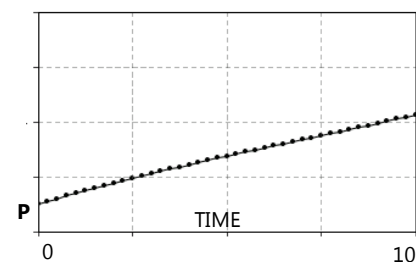
A lack of politically difficult reforms hampers progress. A centralized government, inherently inefficient at allocating resources compared with localized government, impedes outcomes of centralized schemes. Innovation is stifled by a lack of autonomy and precious natural resources are wasted. This increases lack of trust in institutions, resulting in continuing protests and political logjam.

Impatience and Protest



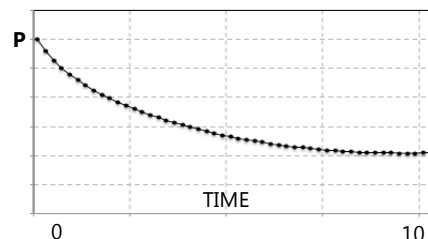
Aspirations rise faster than growth of good livelihood opportunities

Political Logjam



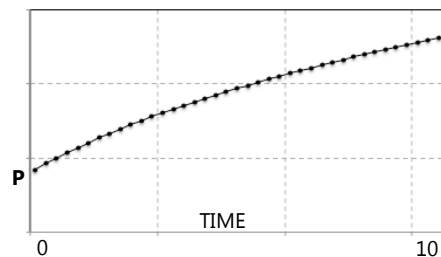
Insufficient institutional reforms, along with rising impatience create political logjams

Pace of Inclusion



While more people come out of poverty, many remain behind, and the sense of unfairness increases

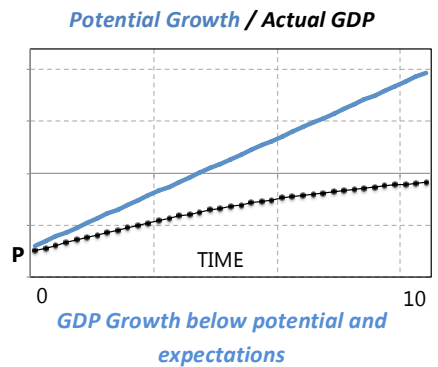
Budget Deficit



Inadequate and slow reforms continue to put pressure on budget deficits

Reforms are made but many are stalled or diluted. The economy grows but hardly achieves its full potential: insufficient social and political cohesion remains a threatening source of instability.

The systems' analysis showed the directions of change, and the NCAER model quantifies the changes in variables. For the 12th Five Year Plan, GDP growth averages 6%. This is good, but falls far short of potential. The fiscal deficit remains elevated at 4.5%, and leaves the country vulnerable to external shocks. The poverty ratio has declined marginally, but not enough to change disproportionate income distribution. Given limited reforms in this period, the next five to ten years post 2017 seem to portend more of the same "muddling along"



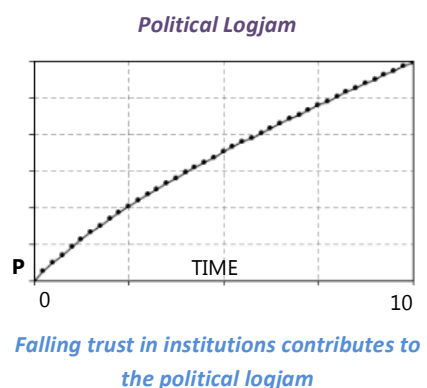
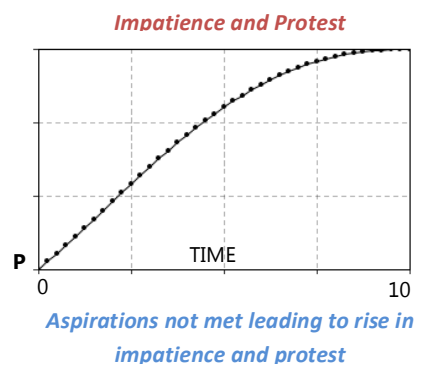
Scenario 2: Policy Logjam (The Flotilla Falling Apart)

This scenario emerges from India remaining stuck in a centralized governance system whose theory-in-use is to exert control in the face of demands for devolution, by centralized mega-schemes and projects, and by "redistribution" of wealth through a system of "handouts" and subsidies. The impatience and political logjam that result put India under severe stress, with several factions threatening to dissociate themselves from the political union.

The picture

A flotilla of ships is trying to sail together, but ships keep colliding with each other. The ships do not communicate enough. Consequently, ships often sail off in different directions. The flagship is spending too much time just getting the flotilla back together, leaving little time to coordinate future directions.

Only in a calm sea does the flotilla move faster. When the sea becomes stormy, and the ships often cannot even see each other, much less the horizon that they are to sail towards, they fall apart. Moreover, since the ships don't have an updated chart of the seas they are sailing in, they sometimes hit uncharted rocks. Thus some ships are left behind while others move on.



These setbacks are disheartening the flotilla’s crew. They hear of the rapid advance of other flotillas. They also hear the frequent confused signals between the ships in their own flotilla. This makes them even slower in responding to any misfortune that strikes their ship—consequently, making it harder to recover.

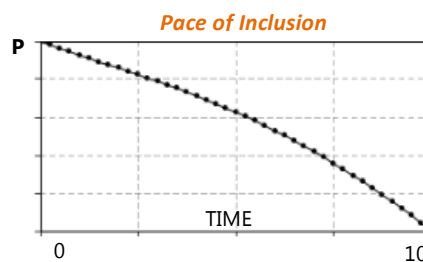
The explanation

In a system where hardly any institutional reforms are made, a vicious cycle emerges which results in the political logjam becoming so severe that government can barely function.

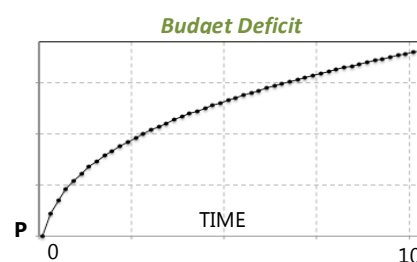
Extremism infects more areas of the country. Stand-offs between central government institutions and between the center and the States become rigid. Governments try to win popularity with increasing hand-outs. Civil society protest movements take up non-negotiable stances. The political logjam becomes worse. Hand-outs strain governments’ finances. Investments slacken. Employment needs do not grow as rapidly as the workforce, so India’s demographic changes become a ticking time bomb. Handouts do not incentivize innovation and entrepreneurship, but instead create dependency. A cash-strapped government is unable to achieve its goal of poverty alleviation through subsidies.

Needless to say, both the pace and pattern of inclusion are far off target. Any belated attempts at reform are now stymied by a central government with limited financial or political capital to deploy.

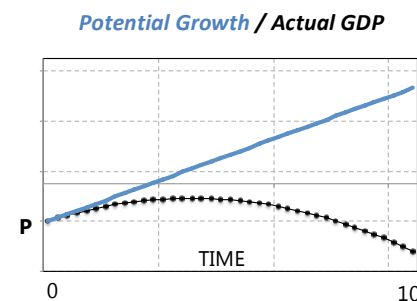
At the end of the 12th Plan, average GDP growth and fiscal deficit of 5%, are tell-tale indicators of five years of missed opportunity. Poverty headcount has remained stagnant at approximately 27%. Worse still, the ongoing protests, political logjam, and lack of reform offer little hope for change in the following five to ten years.



A handout culture persists; slow growth of livelihoods and increasing budgetary constraints slow the pace of inclusion



A crisis in the government’s financial position breaks down confidence in the economy



GDP growth continues to fall further below potential

Scenario 3: Strong, Inclusive Growth (*The Flotilla Advances*)

This is the future of India with a federal governance system in which the wheels begin to mesh more smoothly, local governance institutions and small enterprises are nurtured and grow effectively. Livelihood opportunities, along with community based solutions and enterprises for addressing environmental issues, are seen to be sprouting.

The picture

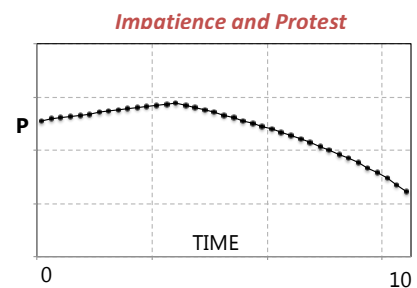
The flotilla is well coordinated with better navigation and communication systems between all the ships. It has created a system to arrive at a consensus about the direction the flotilla must take. The ships are manned by inventive crews, empowered to try new ways to speed up their ships. With good communications between the ships, new ideas from one ship are transmitted quickly to others. Consequently, all ships are improving their abilities to navigate and sail faster.

The flagship has ensured that all ships have a map, know the route to take, and have good instruments to guide themselves, and coordinate with others. When ships temporarily lose contact with others in a storm, they are able to return to the path and rejoin the flotilla. Their confidence in their ability to progress and in their captain motivates the crews to go about their work satisfied that they are individually and collectively moving ahead.

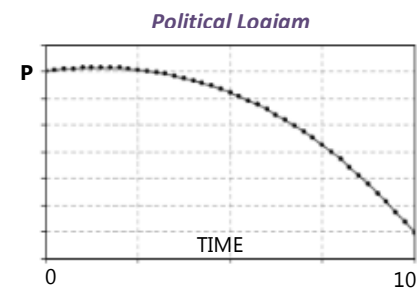
The explanation

The government vigorously takes up necessary reforms in government processes and regulatory systems, along with pending economic reforms. States have flexibility to devise local solutions while also linking the assistance to agendas for governance reforms. In inclusion, governance, and sustainability, a self-sustaining positive cycle emerges. People are engaged, not alienated.

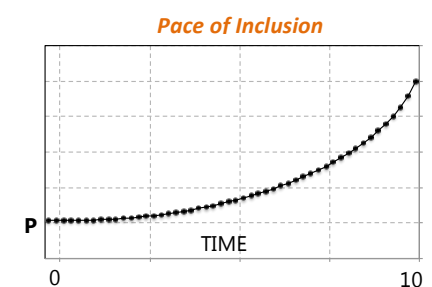
“Networked enterprises” such as farmer cooperatives, clusters of small and large enterprises, create a wider spread of opportunities for citizens to earn better livelihoods. Faster growth of economic activities and employment opportunities



Impatience continues till citizens begin to perceive benefits of reforms and improving livelihoods



Successful implementation of local projects by empowered local governments increases trust in institutions



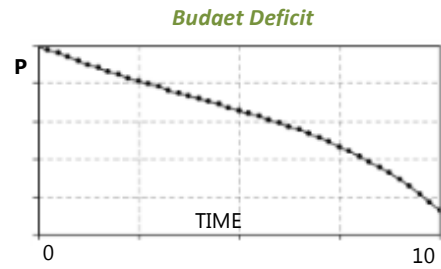
Strong inclusionary growth is a byproduct of localized skill development and innovation in business models

increases government revenues and reduces the demand for handouts. A challenge in this model of distributed authority is the “scaling up” of good solutions across the country.

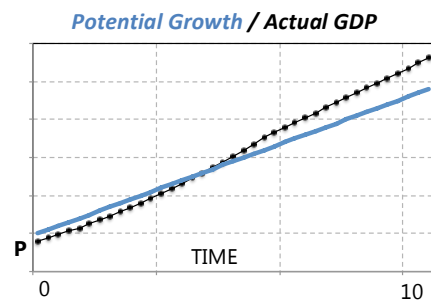
Participation and more innovations make the whole system stronger and provide greater protection from external shocks.

Thus, decentralized governance and solutions, along with a focus on opportunity-based inclusion produces more sustainable strength—socially and economically.

GDP growth rate over the first five years averages 8%, nearly reaching the full potential predicted by economists. A fiscal deficit of 3% leaves the government with ample reserves to handle external shocks. In just five years, the poverty headcount has dropped several percentage points, and trends point to further decreases in the subsequent decade.



With India fulfilling its growth potential, the government's finances improve

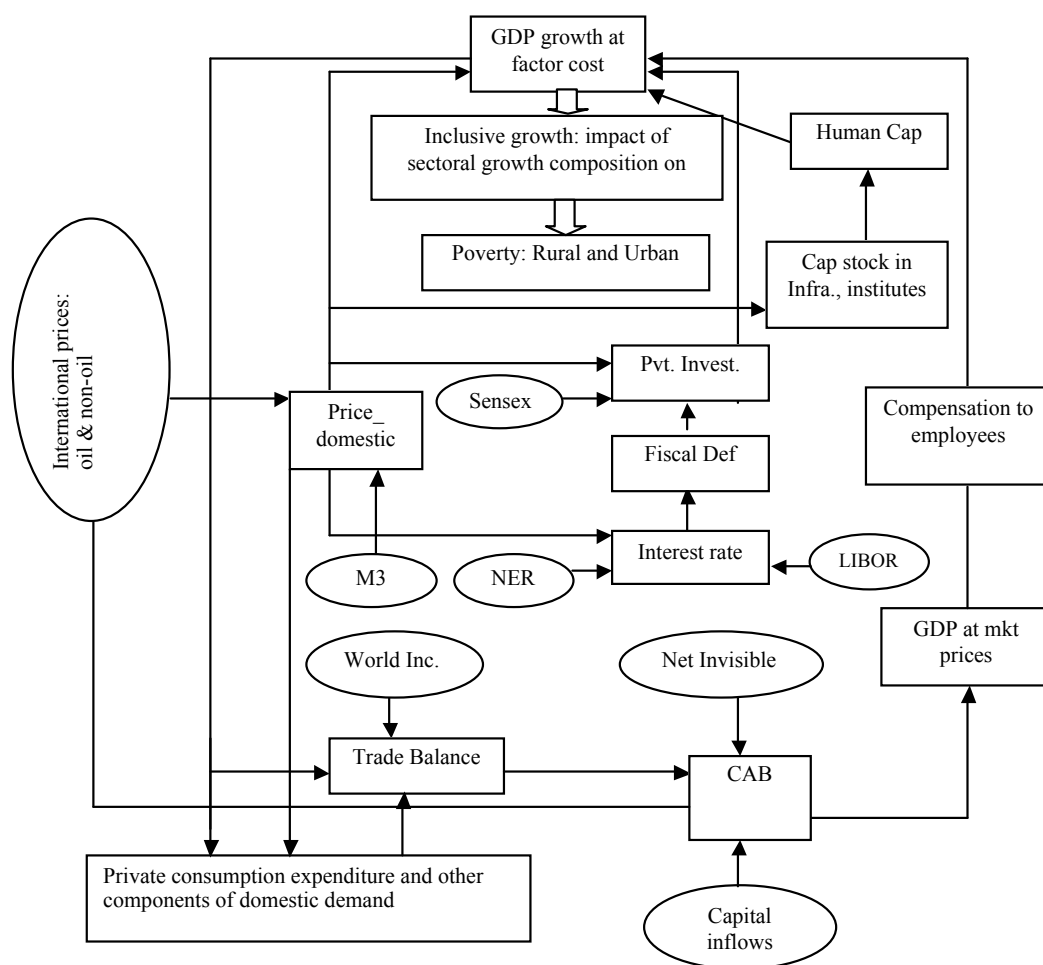


GDP growth catches up with potential and is sustained

Modeling the Scenarios

The National Council of Applied Economic Research (NCAER) was commissioned to create a macroeconomic model that would provide quantitative rigor to the original scenarios. NCAER created an analysis of the three alternative scenarios noted above, set in a comprehensive macroeconomic framework. This model provides insights into how the reforms and policy decisions discussed in the scenarios could influence traditionally measured dimensions of the economy over the 12th Five Year Plan period.

The schematic of the model is as follows:



Note: Variables mentioned in the circle are exogenous.

Figure: Schematic of Macroeconomic Model

Two key features worth highlighting in this model are:

- Improving the quality of health and education is an important area for improving **productivity**. NCAER's analysis shows that a one Rupee investment in human capital or in physical infrastructure generates a very similar growth impact. Improvement in productivity is captured through – (i) physical infrastructure development and (ii) human capital development (health and education). These sources of productivity improvement, particularly through human capital have been specified in the output determination of manufacturing sector and in the sector "services other than infrastructure".
- Sectoral level output** is determined by capital stock and demand conditions. Investment adds to capital stock; productivity improvements affect output from a given level of capital stock; demand influences capacity utilisation and therefore output.

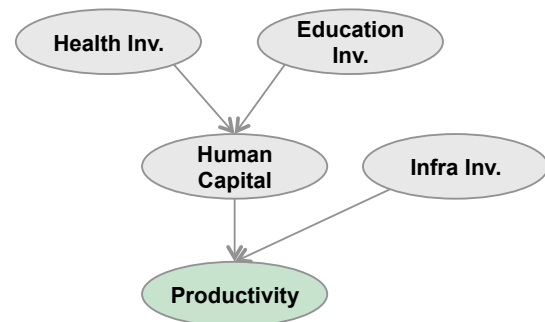


Figure: Productivity Calculation

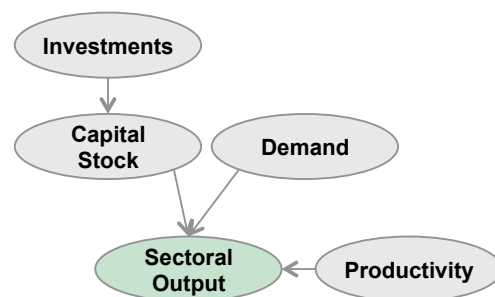


Figure: Sectoral Output Calculation

Model Structure (Complete model available in NCAER report)

Output sectors:

- Agriculture & allied sector with further disaggregation into rice, wheat, other foodgrains, cotton, sugarcane, oilseeds, other non-foodgrain crops sub-sector
- Mining, Quarrying & Manufacturing
- Construction
- Electricity, Gas and Water supply
- Transport, Storage and Communication
- Other Services

Determinants of Sectoral output:

- Capital stock, demand conditions, infrastructure, human capital (rainfall in the case of agriculture)
- Capital stock and hence investment plays a prominent role in determining output
- Demand conditions have short-term impact
- Sectoral prices: energy prices, other administered prices, import prices, liquidity

Components of aggregate demand:

- Private final consumption expenditure (real) (sectors corresponding to production sectors); function of real disposable income; relative prices
- Government final consumption expenditure: exogenous
- Private investment: sectoral investment is determined by output, real interest rate, fiscal deficit to GDP ratio, public investment in infrastructure, external factor like stock market
- Public investment: exogenous
- Exports (Goods): external factors (World GDP, international prices)
- Imports (Goods): crude oil, edible oils and others; driven by domestic demand, prices and exchange rate
- Net invisibles: exogenous

Fiscal Block:

- Central government expenditure: wage bill, interest payments, subsidies, capital expenditure (Government support to infrastructure explicit)
- Central government tax revenue: indirect tax (petroleum sector and others); direct taxes
- Central government non-tax revenue (current and non-debt capital)
- Deficit measures
- General government (Centre + States) accounts more aggregated than central accounts

Monetary block:

- Money supply exogenous
- Interest rate adjusts to exchange rate depreciation, external interest rate and domestic inflation
- Interest rate also affects fiscal position which in turn affects investment
- Exchange rate exogenous

Important Equations Selected from the Model

Output equation of Mining, quarrying and manufacturing

$$\begin{aligned} \text{Log (RVAMQM)} = & - 0.3595 + 0.048298 * \text{Log} ((\text{RKMQM} + \text{RKMQM}(-1))/2) + 0.33602 * \text{Log} (\text{CETOT}_T * 100/\text{PALL}) \\ & \qquad \qquad \qquad (0.2878) \qquad \qquad \qquad (2.392) \\ & + 0.18695 * \text{Log} (\text{EDNHINDEX15}) + 0.51374 * \text{Log} ((\text{RK_INFRA} + \text{RK_INFRA}(-1)) / 2) \\ & \qquad \qquad \qquad (0.746) \qquad \qquad \qquad (3.242) \\ R^2 = & 0.99 \qquad \qquad \qquad \text{DW} = 1.80 \end{aligned}$$

Output equation of other services

$$\begin{aligned} \text{Log (RVASER)} = & - 2.05342 + 0.08604 * \text{Log} ((\text{RKSER} + \text{RKSER}(-1)) / 2) + 0.29213 * \text{Log} (\text{CETOT}_T * 100/ \text{PALL}) \\ & \qquad \qquad \qquad (0.533) \qquad \qquad \qquad (4.279) \\ & + 1.27189 * \text{Log} (\text{EDNHINDEX15}) + 0.33071 * \text{Log} ((\text{RK_INFRA} + \text{RK_INFRA}(-1)) / 2) \\ & \qquad \qquad \qquad (2.191) \qquad \qquad \qquad (1.980) \\ R^2 = & 0.99 \qquad \qquad \qquad \text{DW} = 1.64 \end{aligned}$$

Human Capital Index

$$\begin{aligned} \text{Log (EDNHINDEX15)} = & \\ & - 0.88087 + 0.05968 * \text{Log} (((\text{REVEXPEDN}_T + \text{REVEXPH}_T + \text{CAPEXPEDN}_T + \text{CAPEXPH}_T) / \text{WPI}) / \text{RVATOT}) \\ & \qquad \qquad \qquad (1.973) \\ & + 0.2647 * \text{Log} (\text{INSTITUTES}) + 0.1563 * \text{Log} (\text{RK_INFRA} * 10 / \text{POPLN}) \\ & \qquad \qquad \qquad (3.389) \qquad \qquad \qquad (3.406) \end{aligned}$$

Variables in Important Equations

#	Variable	Definition	Exogenous / Endogenous
20	BSE_AVG	Sensex (average of months)	Exogenous
21	CABRBI	Current Account Balance (RBI definition) (Rs. Crore)	Endogenous
25	CAPEXPH_T	Capital expenditure on Health (% of GDPmp)	Exogenous
28	CARRCPT_C	Non-Debt Capital Receipts -Centre (Rs. Crore)	Endogenous
31	CETOT_T	Compensation to Employees - Total (Rs. Crore)	Exogenous
33	CEXP_C	Capital Expenditure - Centre (Rs. crore)	Exogenous
57	EDNHINDEX15	Education and health index	Endogenous
64	FDEF_C	Gross Fiscal Deficit - Centre (Rs. Crore)	Endogenous
65	FDEF_T	Gross Fiscal Deficit - All India (Rs. Crore)	Endogenous
101	HCR_N	Head count ratio of poverty_All India (in percent)	Endogenous
102	HCR_R	Head count ratio of poverty_Rural (in percent)	Endogenous
103	HCR_U	Head count ratio of poverty_Urban (in percent)	Endogenous
110	INFL	Inflation Rate (Per Cent)	Endogenous
112	INSTITUTES	No. of educational institutes in India	Exogenous
119	LINT10	Long-term interest rate (10-year government securities)	Endogenous
126	MTOTRBI	Total Imports (Rs Crore) RBI	Endogenous
128	NER	Nominal Exchange Rate (Rs./\$US)	Exogenous
129	NETINV	Net Invisible Receipts (Rs Crore)	Exogenous
160	POPLN	Mid Year Population (Million)	Exogenous
192	REVEXPEDN_T	Public expenditure on Education -All India (Rs. Crore)	Exogenous
194	REVEXPH_T	Public expenditure on Health -All India (Rs. Crore)	Exogenous
196	REXP_C	Revenue Expenditure – Center (Rs Crore)	Endogenous
208	RGFCFGMQM	Real Gross Fixed Capital formation on Mining, Quarrying & Manufacturing -Pvt Sector (Rs Crore)	Endogenous
216	RGFCFPMQM	Real Gross Fixed Capital formation in Mining, Quarrying and Manufacturing - Private (Rs. Crore)	Endogenous
217	RGFCFPPSER	Real Gross Fixed Capital formation in Other Services - Private (Rs. Crore)	Endogenous
230	RK_INFRA	Real Capital Stock in Infrastructure (Rs. Crore)	Endogenous
234	RKMQM	Real Capital Stock in Mining, Quarrying and Manufacturing (Rs Crore)	Endogenous
246	RVAMQM	Real Value Added at Factor cost in Mining, Quarrying and Manufacturing (Rs Crore)	Endogenous
247	RVANAGR	Real Value Added at Factor cost in Non- Agriculture (Rs Crore)	Endogenous
248	RVASER	Real Value Added at Factor cost in Services (Rs Crore)	Endogenous
249	RVATOT	Real Value Added at Factor cost - Total (Rs Crore)	Endogenous
254	SI91	Short-term Rate of Interest (91-day Treasury Bill rate, Per Cent)	Endogenous
259	TOTREV_C	Total Revenue – Center (Rs Crore)	Endogenous
268	WPI	Wholesale Price Index – All Commodities (Index, 1993-94=100)	Endogenous
269	WPIAGR	Wholesale Price Index – Agricultural Commodities (Index, 1993-94=100)	Endogenous
271	WPIENERGY	Wholesale Price Index of Fuel, Power, Light and Lubricants (Index, 1993-94=100)	Exogenous
274	WPIMQM	Wholesale Price Index – Mining, Quarrying Manufacturing (Index, 1993-94=100)	Endogenous
288	XTOTRBI	Total Exports (Rs Crore) RBI	Endogenous

Recreating the Scenarios in the NCAER Model

The three scenarios i.e. "The Flotilla Advances", "Muddling Along", and "Falling Apart" are generated by specifying the values of certain exogenous/policy variables in the model. The endogenous or outcome variables are then determined by how the exogenous variables influence the system. The pace and pattern of inclusion, GDP growth and government finances are three important outcome variables addressed in this framework. External factors such as world GDP, external interest rates, and international commodity prices are kept constant for all three scenarios. The figure below shows how the scenarios translate into the policy assumptions for the model.

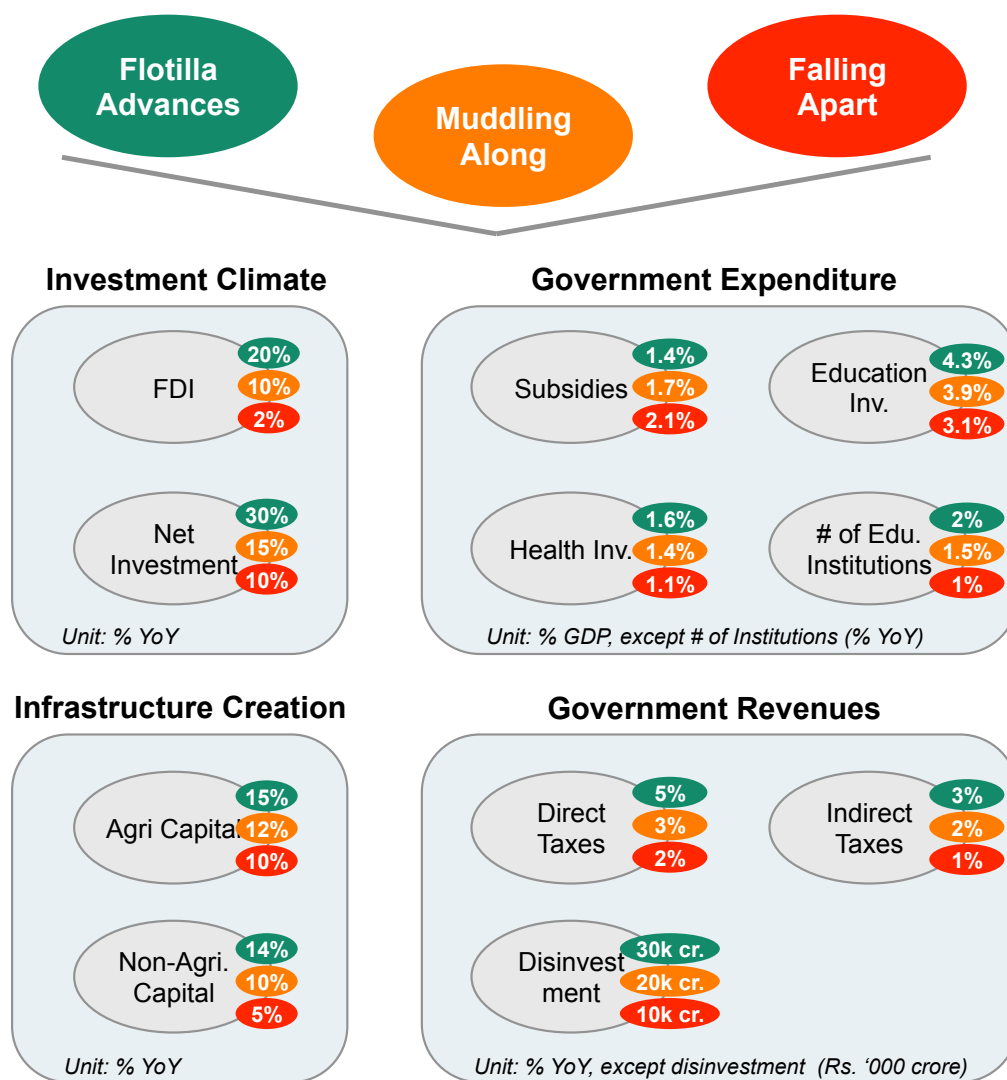


Figure: Exogenous Variables for Three Scenarios

Results of the Scenario Analysis

When analyzing the complex flotilla of India's economy, it is important to study both the quantitative relationships (such as those which can be manipulated within the quantitative model provided by NCAER), and qualitative, or "conceptual", relationships. The figure alongside combines the original "qualitative" factors from the Scenarios analysis with those from the NCAER model. This combined model is illustrated as a tree, where the trunk represents qualitative factors in the system, the branches represent the quantifiable factors, and the fruits are the outcomes of growth, inclusion, and fiscal health.

The results of the NCAER analysis reinforce the findings of the original Scenarios report - improvements to our government institutions and business models lead to improvements in productivity of assets, pace of implementation, and increased public confidence. These then underpin the achievements of our end goals of growth and inclusion. A detailed discussion of each of the three Scenarios will help illustrate this.

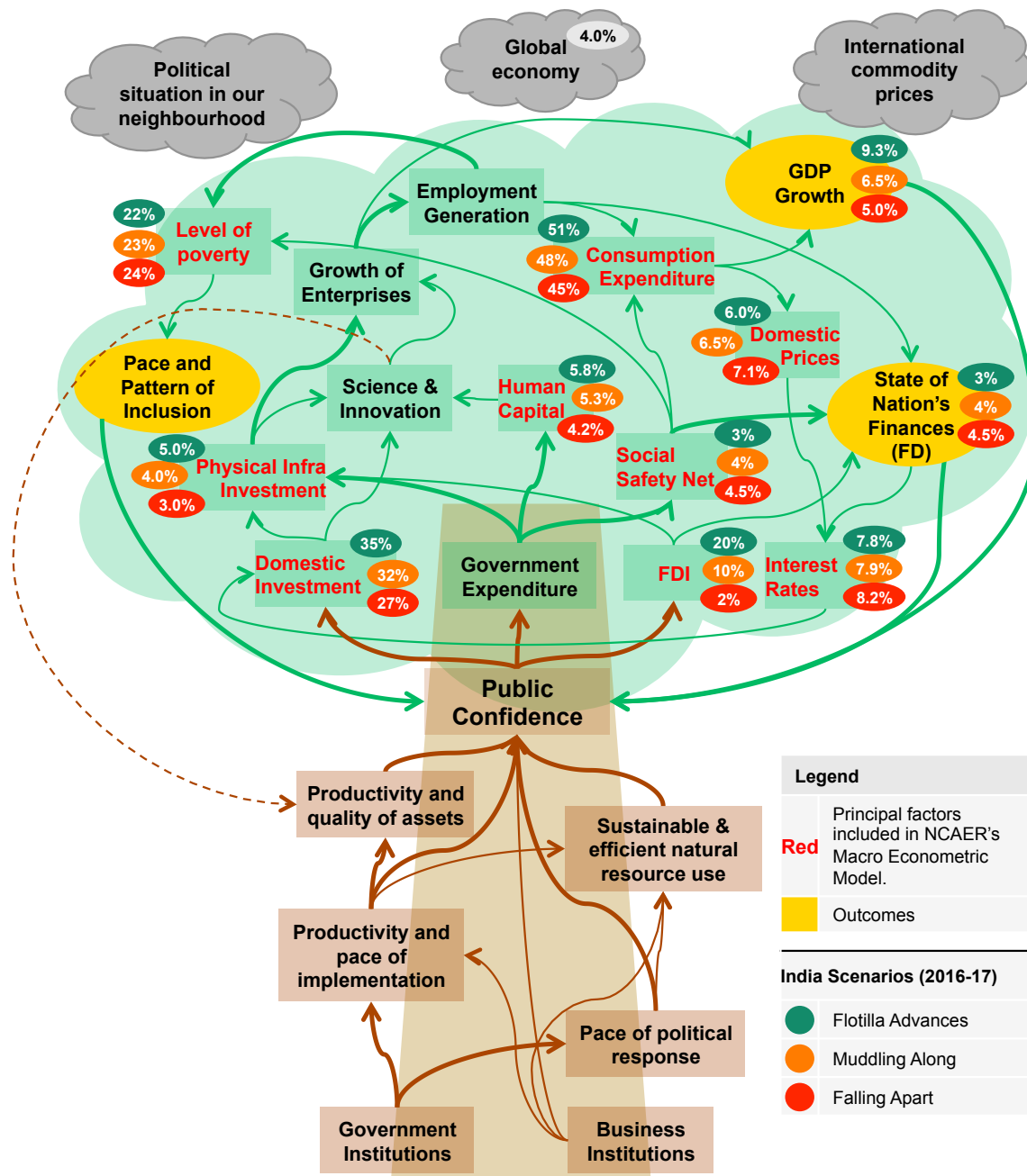


Figure: Combined Model Showing Results of Three Scenarios

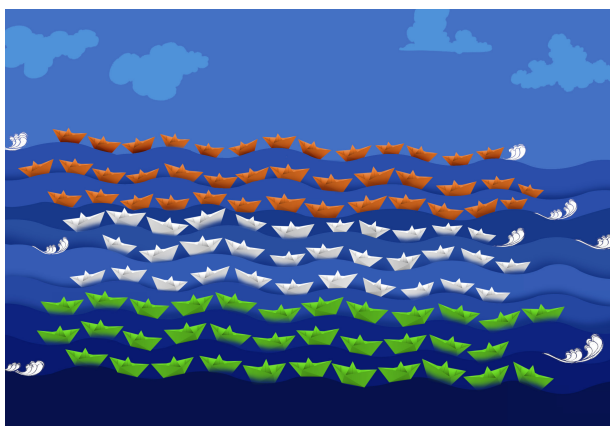
Note: All numbers are for FY 2016-17, expressed as % of GDP, except for FDI (YoY), GDP growth (YoY), Level of Poverty (% of pop.)

Major Outcomes By Fifth Year of Twelfth Plan (FY 2016-17)

	Pace of Inclusion (Poverty Ratio)	GDP Growth	Fiscal Deficit
Flotilla Advances	21.7%	9.3%	3.0%
Muddling Along	22.8%	6.5%	4.0%
Falling Apart	24.2%	5.0%	4.5%

Strong, Inclusive Growth (“Flotilla Advances”)

This is an optimistic scenario under the assumption that the government would successfully drive key structural policy reforms and their effective implementation. Decentralisation and good governance policies will improve the efficiency of public delivery system and address the supply side bottlenecks. Under a positive policy environment, the investment climate



would also be positive, with significant net capital inflows and healthy growth in private investment both being drivers of economic growth.

Reforms in oil, fertilizer and other key sectors would improve the fiscal position of the government. Subsidies, particularly oil and fertilizer subsidies, will be phased out substantially during the Plan period, amounting to 1.4 per cent of GDP by 2016-17. Fiscal consolidation not only depends on cutting down unproductive expenditure like subsidies and interest payments, but also on expanding the tax base and improving revenue collection. The implementation of DTC and GST would improve the tax collection from 2014-15 onwards.

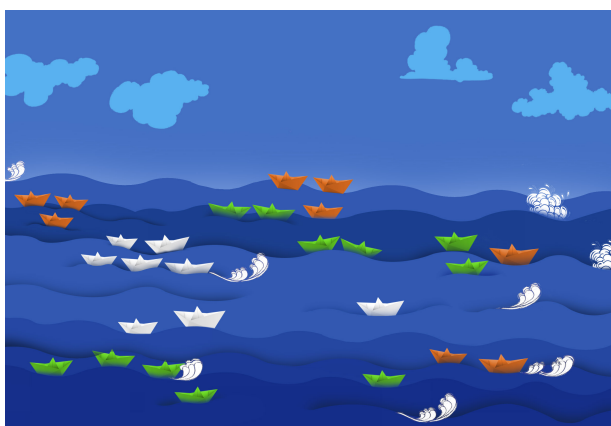
The government diverts a part of these fiscal savings towards creating more productive assets including improving the human capital. Increased allocations to health and education sectors are expected to improve quality of human resources and raise GDP growth in the long term.

Under this scenario, the government is able to meet its medium term fiscal goals, with the deficit coming down to around 3.6 per cent of GDP by 2015-16 from the current level of 5 per cent of GDP.

The overall GDP at constant 2004-05 prices is projected to grow by an average of 7.8 per cent during the 12th Plan period (reaching 9.3% by 2016-17). Across the production sectors, services sector is expected to register higher growth of 9 per cent followed by industry around 7.1 per cent and agriculture by 3.3 per cent.

Insufficient Action (“Muddling Along”)

Under this scenario, India would initiate some reform measures to encourage investment. However, the business environment continues to remain weak as the reforms may cover only a narrow set of issues. Net invisible receipts and FDI inflows will remain weak due to domestic policy uncertainty. Capital market (BSE Sensex) will continue to show poor returns in this scenario and



there will be more pressure on Rupee to depreciate against US dollar. Both Central and State governments will miss the opportunities to control unproductive expenditure.

The overall GDP growth is estimated at 6.0 per cent per year for the Plan period, a decline of 1.8 percentage points over the Flotilla Advances scenario. The decline in GDP growth has come in services and industry sectors due to decline of private investment in these non-agriculture sectors. There is also less impact on poverty reduction as the growth effects are smaller.

Policy Logjam (“Falling Apart”)

This is the most pessimistic scenario among the three considered both in terms of economic performance and policy environment. This scenario reflects a situation where the government would be unable to undertake key policy reforms. Subsidy levels are not stabilised. The policy logjam, especially relating to investments, witnessed in the later part

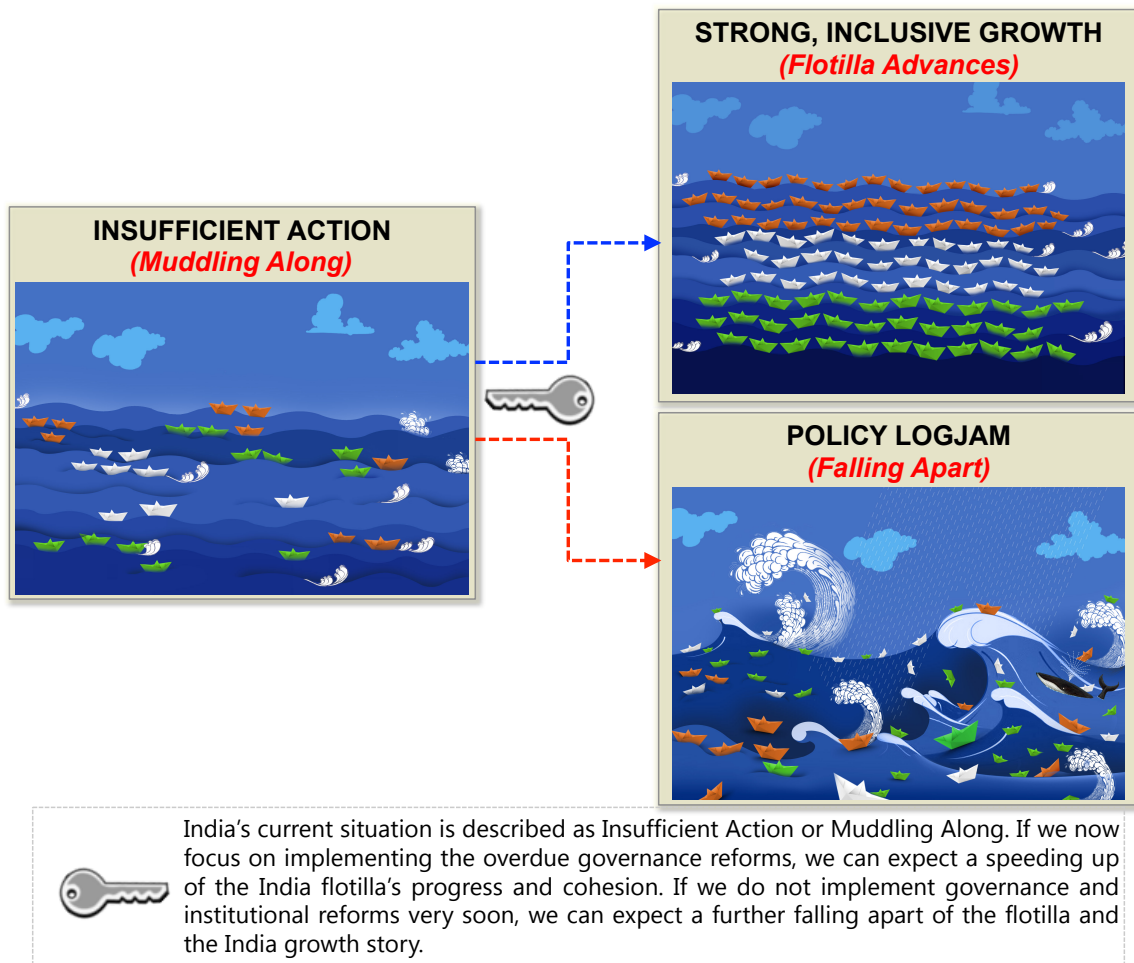


of the 11th Plan would continue. The tax revenue growth will remain weak with the implementation of key tax policy reforms such as DTC and GST will be delayed further.

The allocation of resources in health and education sectors would decline as a ratio to GDP from the current levels due to resource constraints. The public sector investment both in agriculture and non-agriculture sectors would decline substantially as compared to the pre-crisis level.

The overall annual GDP growth for the Plan period is estimated at 4.8 per cent, a decline of 3 percentage points over the Flotilla Advances scenario. GDP growth rate declines across all the sectors because of significant fall of investment (both private and public), and a rising fiscal deficit. The country will enter the 'low-middle income growth trap'. The results also show high fiscal and current account deficits, which are unsustainable as the debt levels would rise leading to greater debt servicing burden. Significant decline of GDP growth would also jeopardise inclusiveness of growth, and poverty reduction will be much smaller than in the Flotilla Advances scenario.

India at a Turning Point: Which Scenario Will Emerge?



Planners cannot create a spirit of shared vision in citizens: they can only provide paths and plans for realization of the vision. At most, they may provide a seed to start conversations about a shared vision for India's future.

The scenarios, along with the system analysis of forces, and elements of an emerging vision, provide starting points for a new conversation between the Planning Commission and stakeholders, and also amongst citizens. There is no guarantee that this process will result in a consensus. But, it is certain that, in the absence of a good dialogue about these issues, a consensus is even less likely!

The questions are: What is the character of the country we want, and how will we build it together.

From the Scenarios to the Twelfth Plan

In the Twelfth Plan, the Planning Commission has incorporated 'scenario planning' for the first time to look ahead and determine the reform strategy to ensure growth that is faster, more inclusive, sustainable, and embedded in effective governance. The Twelfth Plan presents three scenarios for the country, recognizing that development and growth outcomes will depend on the extent to which we are able to take difficult decisions. Reforms in the processes of governance, administration and implementation are the need of the hour, and the Plan has been drafted with these imperatives in mind.

The Indian economy is at an inflexion point. While on the one hand, the economy is witnessing a rapid growth in opportunities, on the other, these opportunities may not be available to all. In such a situation, the choice for policy is really between 'livelihoods' versus 'handouts'. For growth to be inclusive in the true sense of the word, the lens has to shift to ensuring livelihoods since 'handouts' are often only palliatives for the economy's inability to generate adequate income-generating opportunities. India has a young population, and consequently, the labour force is expected to increase over the next 20 years. To reap this demographic dividend we must ensure that our younger citizens come into the labour force with higher levels of education and the skills needed to support rapid growth. Both the scenarios and the Twelfth Plan therefore recommend increased investments in human capital. However, we must also ensure that there are ample employment opportunities awaiting these young, skilled citizens.

The Twelfth Plan places a special focus on sectors which employ, or have the potential to provide employment, on a large scale. The National Manufacturing Policy aims to create 100 million new jobs by 2025, through a Manufacturing Plan which emphasizes the promotion of Small and Medium Enterprises. Rather than focus on large-scale "elite" tourism, the principal thrust of the Twelfth Plan is on pro-poor tourism, which has the potential to create far more jobs in rural and semi-rural areas, where they are needed most. Agriculture and Construction, the two largest providers of employment in the country also receive special attention in the Plan. The successful implementation of these sector-specific plans will be a key determinant of the Plan goals of inclusion through livelihoods and faster growth.

The second test of nation-building lies in the capacity of its citizens to take ownership. Thus capacity-building for local governance and management of programmes is another essential lever for effective growth. The structures of government schemes and institutions must be reformed to improve governance and delivery on the ground so that things move from policy to action.

From another lens, it is important to be cognizant of the fact that all growth and development will be for naught if the future generations are not able to reap the benefits of

all that we do today. Ensuring that growth be a sustainable process, with a clear focus on green policies, is therefore the third main lever.

The Twelfth Plan document approved by the National Development Council in December 2012 is supplemented by another document, 'Scenarios: Shaping India's Future', which has also been posted on the Planning Commission's website. The purpose of this compilation is to connect the Plan with the strategies for growth explained in the Scenarios that can lead us to our desired outcomes viz, effective governance, deeper inclusion, environmental sustainability, and faster economic growth.

A group of enthusiastic Young Professionals at the Planning Commission volunteered their time to examine the Plan document and distil key initiatives from each Chapter that support these strategies to lead to the desired outcomes.

Each of these identified initiatives is grouped under the specific lever of impact outlined in the Scenarios document viz., Inclusion, Governance, and Sustainability. These recommendations in the Plan document are thus directly seen to connect to the strategies outlined in the Scenarios document, to produce the most favorable way forward for our country's development process. This compilation enables effective communication of the message: What is the Plan seeking to achieve? What are its underlying strategies? How is it proposing to implement these through the various wings and programmes of government?

The chapters in this section correspond to the three policy levers identified by the Scenarios document. Each chapter highlights some major initiatives which align with the respective leverage point:

1. **Inclusion through livelihoods** – initiatives that focus on generating employment or employability
2. **Governance** – initiatives with a focus on strengthening **local, community-based** and **collaborative** governance
3. **Sustainability** – initiatives that focus on a "green" lens to ensure energy-efficient and environment-friendly growth

The description for each of the identified initiatives provides an overview of the current ecosystem in which the initiative is focused, followed by the solution proposed in the Plan, and finally the expected impact on that ecosystem.

Strategies for Inclusive Growth (enabling livelihoods)

1. Structural shift towards Inclusion
2. Human Resources and Skill Development in the manufacturing sector
3. Increasing Women's Participation in the Workforce
4. Pradhan Mantri Gram Sadak Yojana (PMGSY) II
5. Phase-II of the Rajiv Awas Yojana for Urban Poor
6. National Skill Development Authority (NSDA) and National Skill Qualification Framework (NSQF)
7. Establishment of Community Colleges
8. Scholarship Schemes for SC Students
9. Creation of a dedicated cadre of social mobilisers at each Gram Panchayat level
10. Setting up Vocational Training Centres in Tribal Areas
11. Land Reforms: Agricultural Land
12. Pro-Poor Tourism
13. Revisiting Resettlement and Rehabilitation terms for those adversely affected by development projects
14. Management Information System for the Mahatma Gandhi National Rural Employment Guarantee Scheme
15. Integrating Socio-economic and Caste Census (SECC) for Rural Housing
16. Inclusive Innovation Fund (IIIF)
17. Construction Industry Development Council (CIDC)

Strategies for Governance

1. Restructuring of Centrally Sponsored Schemes
2. Effect of Goods and Services Tax (GST)
3. PPP Promotion
4. Water Supply, Sewerage, Storm Water Drainage, Solid Waste Management and Environment Sustainability of the Cities
5. Private Sector Role in Higher Education
6. Simplifying Labour Laws
7. India Backbone Implementation Network
8. Resettlement and Rehabilitation Provisions for those displaced by the acquisition of Non- Agricultural Land
9. Integrated Action Plan (IAP) for select backward and tribal districts
10. Land Reforms: Modernization of Land Records
11. Restructuring of Backward Region Grants Fund (BRGF)
12. Pradhan Mantri Gram Sadak Yojana (PMGSY) II
13. National Health Mission
14. Labour Market Information System (LMIS)
15. Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY)
16. National Rural Drinking Water Programme (NRDWP)

17. Improving Urban Transportation
18. Public Private Partnership (PPP) in Railways
19. Modernization of Railways
20. National High Speed Rail Authority (NHSRA)
21. North East Region (NER)
22. National Telecom Policy (NTP)-2012
23. Flexi-Fund for Rural Development
24. Creation of a dedicated cadre of social mobilisers at each Gram Panchayat level
25. National Irrigation Management Fund (NIMF)
26. Public Land Bank (PLB) for Land Reforms in the context of Agricultural Land
27. Management Information System for the Mahatma Gandhi National Rural Employment Guarantee Scheme
28. Technology-based monitoring of forest cover and biodiversity
29. Green India Mission
30. Convergent technology solutions to target rural India
31. Debt Restructuring Policy
32. New Exploration Licensing Policy (NELP)
33. Phase-II of the Rajiv Awas Yojana to enable access institutional credit to the Urban Poor
34. Institutional Arbitration system in the Construction Sector
35. Improved Air Traffic Management

Strategies for Sustainability

1. National Mission for Sustainable Agriculture (NMSA)
2. Green India Mission
3. Technology-based monitoring of forest cover and biodiversity
4. National Mission for Enhanced Energy Efficiency (NMEEE)
5. Water Supply, Sewerage, Storm Water Drainage, Solid Waste Management and Environment Sustainability of the Cities
6. Promoting convergent technology solutions for applications in rural India
7. Increased focus on renewable sources of energy such as wind and solar energy
8. Augmenting Solar Capacity
9. Steps to limit environmental degradation through industrial activity
10. National Irrigation Management Fund (NIMF)
11. Improving Coal Utilization
12. New Exploration Licensing Policy (NELP)
13. Promoting the use of renewable energy in Railways
14. Integrated Action Plan (IAP) for select backward and tribal districts

I. Strategies for Inclusive Growth (enabling livelihoods)

1. Structural shift towards Inclusion

Reference: Chapter 3

Current Scenario

The social sectors viz., health and education are majorly under-funded and make up less than 20% of the allocation of the central government's gross budgetary support (GBS). As a result, India continues to perform poorly on human development indicators. Weak socio-economic indicators also eat into the overall growth multiplier and can in fact translate into greater inequality.

Solution

Conscious policy focus on inclusion: *"The Twelfth Plan focuses on poverty reduction, ensuring access to basic physical infrastructure, health and education facilities to all while giving importance to bridging the regional/social/gender disparities and attending to the marginalised and the weaker social groups. Accordingly, a major structural shift across sectors has been proposed by allocating more resources to the priority areas identified for ensuring inclusiveness."*

Impact

The share of Education has been increased to 12.71 per cent as compared to 11.17 per cent in the Eleventh Plan and the share of 'Health and Child Development' has been increased to 11.45 per cent in the Twelfth Plan as compared to 7.09 per cent in the Eleventh Plan.

2. Human Resources and Skill Development in the manufacturing sector

Reference: Chapter 13

Current Scenario

Despite India's strong economic growth in the last 2 decades, manufacturing has stagnated at 16% of GDP and employment in manufacturing has actually declined in recent years contributing to only ~11 per cent of total employment. The problem is multi-fold with only a small proportion of total manufacturing workforce being adequately skilled. This is because of a significant gap between the existing training capacity and people entering the workforce. Even among trained workers, less than 25 per cent of graduates are estimated to be employable in manufacturing. From the employers' perspective, lack of flexibility in being able to change the size and nature of the workforce limits their ability to make investments.

Solution

Reducing the cost of generating employment: Companies should be allowed to retrench employees if a fairly determined severance is provided. A mandatory loss-of-job insurance programme will safeguard severance funds. Labor laws should be simplified, inspectors should receive better training, e-filing of labor reports should be instituted, and self-certification models should be developed.

Developing qualified human resources: Based on skill development gaps, Sector Skills Councils will establish Labor Market Information Systems to assist in planning and delivery of training. On the delivery side, Clusters and NIMZs can also provide shared infrastructure for training. In terms of policy changes, the Apprenticeship Act must be modified to simplify the process of hiring apprentices and to limit currently harsh penalties imposed on employers.

Providing social protection to low-income workforce: A 'sump' should be created for temporarily unemployed low income workers, which will provide skill upgradation and financial assistance. Awareness of such schemes should be increased through communication programmes.

Impact

Reinforced skill-development programmes for the country could equip tens of millions of workers with the skills necessary to participate in India's growing economy. A "grand bargain" between industry and labor lobbies to overhaul labor regulations will provide entrepreneurs an incentive to hire labor, even while providing for the social security of laid-off low income workers. This will have a direct effect on manufacturing output in the country, in turn generating more jobs for workers. Ongoing dialogue between industry and the workforce will ensure fair benefits and reduced episodes of violence.

3. Increasing Women's Participation in the Workforce

Reference: Chapter 23

Current Scenario

Women's participation in the labour force has decreased substantially from 1993–94 to 2009–10 from 36.8 per cent to 26.1 per cent in rural areas and from 17 per cent to 13.8 per cent in urban areas as indicated by NSSO data. This is partly attributable to the gender gap in literacy which stands at 16.68 per cent. Additionally, deep-rooted ideologies of gender bias and discrimination like the confinement of women to the private domestic realm, restrictions on their mobility, poor access to health services, nutrition, education and employment, ensure their exclusion from the public and political sphere. Underlining all these biases is the wage differential - female hourly wage rates in agriculture vary from 50 per cent to 75 per cent of male rates, and are insufficient to overcome absolute poverty.

Solution

The key elements of the Twelfth Plan that will serve to increase women's participation in the workforce include economic empowerment, inclusiveness of all categories of vulnerable women and mainstreaming gender through legislation.

The Twelfth Plan will endeavour to increase women's employability in the formal sector via a range of policy changes. SHGs are recommended to be classified as a priority sector and given loans at concessional rates and access to the various agriculture schemes being implemented by the government will be ensured. These measures will benefit rural women. In the urban space, the Plan will strengthen the implementation of the Equal Remuneration Act and the Maternity Benefits Act. As a complement to the strategy for increasing women's employment in the formal sector, it is imperative that the Protection of Women from Sexual Harassment at Work Place Bill is made into law.

In order to promote the participation of women in the manufacturing sector, the plan also supports the promotion of marketable manufacturing skills in production activities with special emphasis on skill development of women belonging to marginalized sections. For important traditional industries like leather, handlooms, handicrafts and sericulture, existing publicly funded institutions will be activated to identify the industry's market potential and existing skills. Bottlenecks for modern market-oriented production will be located, and incremental technological improvements including use of computerized technologies for coordination through a gendered analysis of the industrial climate will be introduced.

Impact

Such measures will not only empower women economically, they will address long standing gender biases that mar our society ensuring more inclusive and equitable development.

4. Pradhan Mantri Gram Sadak Yojana (PMGSY) II

Reference: Chapter 15

Current Scenario

The Eleventh Five Year Plan (2007–12), and the Tenth Plan before it, recognised that rural connectivity is a key component of rural development and poverty alleviation in India. One of the main mechanisms for enhancing rural connectivity has been the Pradhan Mantri Gram Sadak Yojana (PMGSY), a Centrally Sponsored Scheme (CSS), launched on the 25 December 2000. Evidence from several impact evaluation exercises on PMGSY indicates that the scheme has managed to generate multiple benefits in the rural economy including increased direct employment, improved access to markets, and the promotion of formation of human capital by improving access to schools and health facilities. However, the PMGSY has achieved only 53 percent of its initial targets.

Solution

Launch PMGSY-II during Twelfth Five Year Plan on sharing basis to consolidate the existing rural road network. This scheme would cover up-gradation of existing selected rural roads based on a criterion to make the road network vibrant, on a sharing basis with the States. The selection of routes would be with the objective of identification of rural growth centres and other critical rural hubs.

Impact

While NHs, expressways and bridges/ ROBs promise overall development, including strengthening and improvement of riding quality, the PMGSY scheme will continue to generate positive externalities for the rural economy via employment, access and connectivity.

5. Phase-II of the Rajiv Awas Yojana for Urban Poor

Reference: Chapter 18

Current Scenario

The urban sector in India faces two distinct but mutually linked sets of challenges. Firstly, the number of urban poor had increased by 34.4 per cent from 1973 to 2004. Secondly, the Government needs to guide the process of urbanization and ensure that basic services, for example, sanitation, water supply, and basic housing are provided to urban citizens expected to be around 600 million within 20 years. As per 2011 census, only 70.6 per cent of urban population is covered by individual connections and even a partial sewerage network is absent in 4861 cities and towns in India. Moreover, public transport accounts for only 27 per cent of urban transport in India. If these challenges are not tackled expressly, not only would India's cities get increasingly chaotic and choked, rural poverty will be converted to urban poverty with no gains to improvement of livelihoods of India's burgeoning population.

Solution

Phase-II of the Rajiv Awas Yojana would be launched under which participating cities are required to make a city wide plan for rehabilitation of 'all' slums. In case such slums have to be relocated because the sites at which they are situated are 'untenable', this should be done through a transparent process and the rehabilitations should be planned in close vicinity of the existing slum. The focus of RAY on provision of rental/social housing stock for the migrant population is a critical element of a long-term preventive strategy.

Impact

Provision of affordable houses for all will ensure not only gainful employment of the urban poor but also the provision of basic civic amenities.

6. National Skill Development Authority (NSDA) and National Skill Qualification Frame work (NSQF)

Reference: Chapter 21

Current Scenario

Dependence on non-formal vocational training highlights the grossly inadequate system of vocational training that currently exists in the country. Vocationally trained in the age group 15–59 in the labour force constitute only 10 per cent of the Labour Force in that age group. The absolute number of those who received formal vocational training was only 1.9 million in 2009–10 while 32.7 million received non-formal vocational training.

Solution

The Twelfth Plan proposes the setting up of the National Skill Development Authority (NSDA) as a permanent institutional framework, entrusted with the requisite authority and resources, responsible solely for skill development in the country.

The plan also proposes the National Skill Qualification Frame work (NSQF) system of multi-entry and multi-exit. This will enable students to acquire some skills after finishing compulsory general schooling, then enter the labour market and gain some work experience and return to the Vocational Education and Training system to continue their vocational education/training.

Impact

The NSDA would be entrusted to coordinate closely with all concerned stakeholders in the area of skill development including different Central Ministries/departments, State Governments, NGOs, Industry, etc. The NSDA would also provide technical supports to different players in skill development area to increase efficiency in service delivery. The NSQF will help bridge the gaps in institutional level to facilitate both vertical and horizontal mobility for learners. It will be particularly beneficial for relatively economically weaker students, since it would enable them to continue in either the vocational education stream of the secondary system or the ITI system, rather than dropping out from the educational or vocational training space altogether.

7. Establishment of Community Colleges

Reference: Chapter 21

Current Scenario

Despite its strong demographic dividend, India is not able to adequately address skill-gaps leaving a vast majority unemployable. On-going UGC initiatives and IGNOUs programmes

that support career oriented add-on courses need to be supplemented by additional institutions such as community colleges.

Solution

The Twelfth Plan endorses the framework for setting up community colleges which has been endorsed in principle by the Central Advisory Body on Education. Community Colleges can serve multiple needs, including:

- i. Provide career oriented education and skills to students interested in directly entering the workforce;
- ii. Provide contracted training and education programmes for local employers;
- iii. Provide high-touch remedial education for secondary school graduates not ready to enrol in traditional colleges, giving them a path to transfer to three or four year institutions;
- iv. Offer general interest courses to the community for personal development and interest. Given these objectives, community colleges would be located to afford easy access to underprivileged students. Such colleges could either be established as affiliated colleges of universities governed, guided and managed through a Department of Skills and Lifelong Learning'(DSLL) or as entirely autonomous institutions linked to sector-skill councils.

Impact

The new initiative to establish Community Colleges for imparting short term modular based vocational skills will provide great opportunity to large section of people in unorganized sector workers for skilling/re-skilling as per market demand.

8. Scholarship Schemes for SC Students

Reference: Chapter 24

Current Scenario

The Scheduled Caste population constituted 16.9 per cent of the total population in census 2011. the poverty headcount ratio (HCR) for SCs remains higher than the national average. Social empowerment through education has been identified as the key factor in social development of SCs. However, access to good quality schools/residential schools still remains much below the actual requirement for SC students, especially for SC girls.

Solution

The Twelfth Plan seeks to promote educational development by providing needed support in the form of scholarships for different levels of education; increasing the hostel facilities for boys and girl students; upgradation of Anganwadis by including high-quality pre-school institutions with qualified teachers; setting up a network of residential schools for high quality education up to Class XII.

A new pre-matric scholarship scheme has been introduced for all SC students studying in Class IX and X, not just children of those engaged in manual scavenging. This scheme is proposed to be extended to SC students studying in Class I to VIII during the remaining period of the Plan. The scheme of Post-Matric Scholarships for SCs should be expanded to provide a laptop or other suitable computing device. It is envisaged to have additional Hostel capacity of 2 Lakh seats for SC students with a minimum of 50 per cent for SC girls. Central assistance to States/UTs for construction of boys hostels need to be increased appropriately.

Impact

Education is the single most important determinant of socially excluded people's ability to participate in an economy. The investments in education advocated by the Twelfth Plan will decrease the poverty incidence among SCs in a sustainable manner over the medium to long term.

9. Setting up Vocational Training Centres in Tribal Areas

Reference: Chapter 24

Current Scenario

The Scheduled Tribes (STs), with a population of 84.33 million as per 2001 Census constituted 8.2 per cent of the country's population. STs have traditionally been concentrated in about 15 per cent of the country's geographical areas, mainly forests, hills, undulating inaccessible areas, making it more difficult to deliver essential services to them and for them to benefit from the acceleration of overall growth. While subsistence agriculture is the primary form of livelihood, it is important to design alternative models of sustainable employment as well as increase quality of education.

Solution

The scheme of Vocational Training Centres in Tribal Areas is to upgrade the skills of the tribal youth in various traditional/modern vocations depending upon their educational qualification, present economic trends and the market potential. Atleast one ITI/Polytechnic should be established in each development block of TSP areas. Other training centres should include women's community polytechnics undertaking rural and community development activities through application of science and technology.

Impact

Vocational training, including women's training, will translate directly into economic empowerment by enabling those who are cutoff from the mainstream, to gain suitable employment or even become self-employed.

10. Land Reforms: Agricultural Land

Reference: Chapter 6

Current Scenario

Land ceiling laws have not been implemented. Around 3 million hectares of land has been declared surplus so far, which is hardly 2 per cent of net sown area in India. About 30 per cent of this land has not yet been distributed as it is caught up in litigations.

83 per cent of farmers operate holdings of less than 2 ha in size, and the average holding size is only 1.33 ha. This is usually fragmented and un-irrigated land. They have inadequate financial resources to purchase and often depend on leasing in small plots, on insecure terms. They have limited access to formal credit. Hence they have few resources for land improvement or crop insurance or adequate inputs.

Legally, land leasing laws in most states either prevent marginal and small farmers from increasing the area they cultivate by leasing in land, or create tenurial insecurity for informal tenants/sharecroppers.

Solution

There should be a comprehensive assessment of all land available with the government, including ceiling surplus land, uncultivated wasteland, and so on. All such available land should be distributed to groups of D&W farmers rather than to individual families.

The recommendation of the Eleventh Plan that all rural families without homesteads be allotted land in the woman's name needs to be implemented in all States, to be used for shelter and supplementary livelihoods. Schemes could be instituted to enable the landless and land poor to themselves purchase land.

Impact

Access to land becomes easier for the poor, small farmers.

11. Pro-Poor Tourism

Reference: Chapter 19

Current Scenario

Tourism in India has the potential to create economic interest of local communities in the protection of its natural and cultural endowments leading to a more sustainable growth. Per the Travel and Tourism Competitiveness Index for 2011, India is well assessed for its natural resources (ranked 8th) and cultural resources (24th) but the human resources base is assessed to be quite weak (96th).

In 2011, Ministry of Tourism commissioned a study by Market Pulse, which estimated a requirement of 36.18 lakh skilled manpower in the hospitality sector. However the Institutional capacities (including the National Skill Development Corporation) created by the end of Eleventh Plan would be able to fulfill only 10 per cent of the estimated additional requirement of manpower in hospitality and tourism sector.

Solution

The Approach Paper to the Twelfth Plan lays down the overall strategy for enabling tourism to realise its potential. It emphasises the need to adopt a '**pro-poor tourism**' approach aimed at increasing the net benefits to the poor from tourism and ensure that tourism growth contributes to poverty reduction. It also prescribes that the 'principal strategy' to realise the tourism potential of India's enormous assets, namely historical sites, places of religious significance, and its vast range of national attractions, must be to focus on developing clusters or circuits around such assets.

To this effect, the Twelfth Plan outlines specific steps to fix for this including the setting up of a Hospitality University, repositioning hospitality education as a mainstream discipline, setting up new Food Crafts Institutes (FCIs) to increase the number of turn-outs with hospitality skills and ensuring sustainable operations, among others. Essentially, the plan envisages reorienting the approach to tourism policy on a 'pro-poor' praxis.

Impact

Since tourism involves a collection of activities and services, it will become a better vehicle for promoting pro-poor growth. These measures will also enable the sector give a better return on investment – estimated to create 78 jobs per million rupees of investment as compared to 45 in the manufacturing sector.

12. Revisiting Resettlement and Rehabilitation terms for those adversely affected by development projects

Reference: Chapter 6

Current Scenario

Land is an essential requirement for urbanization and rapid industrialization to proceed unimpeded. Government also needs to acquire land for a variety of public purposes, including human development and infrastructure projects. People displaced by development are estimated at 60 million, and only a third of these are estimated to have been resettled in a planned manner. Most of these people are the asset-less rural poor, marginal farmers, poor fish-folk and quarry workers. Around 40 per cent of those displaced belonged to Adivasis and 20 per cent to Dalits. The legal framework around land is outdated based on colonial

principles of "eminent domain" under which the state can acquire land at prices that don't reflect market prices.

Solution

An unequivocal commitment to imaginatively exploring ways of rebuilding the livelihoods of those adversely affected by development projects - The comprehensive R&R package for landowners and those who have lost their livelihood includes: Subsistence allowance at Rs. 3000 per month per family for 12 months. The affected families shall be entitled to: (i) Where jobs are created through the project, mandatory employment for one member per affected family or (ii) Rs. 5 lakhs per family or (iii) Rs. 2000 per month per family as annuity for 20 years, with appropriate index for inflation. The option of availing (i) or (ii) or (iii) shall be that of the affected family. If a house is lost in rural areas, a constructed house shall be provided as per the Indira Awas Yojana specifications. If a house is lost in urban areas, a constructed house shall be provided, which will be not less than 50 sq mts in plinth area. In either case the equivalent cost of the house may also be provided in lieu of the house as per the preference of the project affected family One acre of land to each family in the command area, if land is acquired for an irrigation project. Rs. 50000 for transportation. A one-time 'Resettlement Allowance' of Rs. 50000. Other highlights of the law include provision of infrastructural amenities in the resettlement area.

Impact

A strong Land Acquisition Law would mean that the population currently ravaged by the growth of development programmes would have great say in controlling their own land resources.

13. Creation of a dedicated cadre of social mobilisers at each Gram Panchayat level

Reference: Chapter 24

Current Scenario

The Panchayat is the fundamental platform for participatory democracy at the village level. While the original Constitutional definition of the Panchayat did not include its establishment in Scheduled Areas, The Provisions of the Panchayats (Extension to the Scheduled Areas) Act, 1996' (PESA) did extend the definition to Scheduled Areas. However, PESA's implementation has been shoddy, primarily due to the ambiguous administrative definition of a village. As a result, there is exclusion of women and marginalized citizens, and single panchayats are often spread across 10-15 hamlets, leading to ineffective representation.

Solution

The Twelfth Plan proposes the creation of a dedicated cadre of social mobilisers at each Gram Panchayat level, specifically assigned with the task of mobilising the Gram Sabha and ensuring the effective participation of the marginalised, as also spreading greater awareness of laws such as PESA and Forest Rights Act (FRA) and key flagship programmes of the government.

Impact

Better implementation of the Panchayat system in Scheduled Areas will allow Scheduled Tribes to better seek representation and government services. They will ensure that Gram Sabhas actually meet and become vibrant fora of participatory democracy, as visualised under PESA.

14. Management Information System for the Mahatma Gandhi National Rural Employment Guarantee Scheme

Reference: Chapter 17

Current Scenario

The rate of growth of employment is reported to have slackened, in many segments of the rural economy, during the decade of reforms. Rural India has been plagued with critical problems like lack of purchasing power in rural areas, poverty, lack of productivity, agricultural vulnerability etc. Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) was introduced in 2006 as a people centred, demand-driven, self-selecting and rights-based scheme. In 2011–12, nearly 5 crore families were provided over 211 crore person-days of work under the programme. Over the last six years, MGNREGA has generated more than 1200 crore person-days of work at a total expenditure of over 166760 crores. However, there is significant room for improvement in the implementation of the scheme, to reduce corruption and generate awareness.

Solution

Twelfth Plan offers new guidelines as per which all the State Governments will ensure that the MGNREGA MIS will record the demand for work. Twelfth Plan also offers strengthening of both preventive and ameliorative measures to address the issue of corruption. As in the case of Andhra Pradesh, social audits will be institutionalized by the State Governments. They have proved a great check on corruption and large recoveries have also been made. All States will also make an arrangement for a three-tier vigilance mechanism. Attention will also be paid to generate awareness among potential wage-seekers and set up systems that facilitate and rigorously record registration for work, issuance of job cards and application for work.

Impact

These steps will proactively detect irregularities in the implementation of the Act and follow up detected irregularities and malfeasance, including those identified during social audit, and ensures that the guilty are punished and recoveries of misspent funds duly made.

15. Integrating Socio-economic and Caste Census (SECC) for Rural Housing

Reference: Chapter 17

Current Scenario

Significant steps towards improving housing in rural India are taken through Indira Awaas Yojana (IAY) and assistance from State Governments and financial institutions/banks. During the Eleventh Plan, about 30 lakh houses were constructed under various rural housing schemes of State Governments. Financial assistance provided under IAY was raised twice during the Eleventh Plan, on 1 April 2008 from Rs. 25000 and Rs. 27500 (for hilly/difficult areas) to Rs. 35000 and Rs. 37500 respectively and to Rs. 45000 and Rs. 48500 on 1 April 2010. The higher assistance is also provided to districts under the Integrated Action Plan (IAP) for select backward and tribal districts. Progress on some of these innovative features that drive towards convergence with other rural infrastructure schemes like Smokeless Chullahs, Bio-Gas Plant, Kitchen Garden, Life Insurance Scheme, Health Insurance Scheme has been slow.

Solution

The Socio-economic and Caste Census (SECC) will be complete in time for the Twelfth Plan implementation. This Census will provide lists of households that are homeless as well as those who live in poor quality houses.

Impact

Indicators of Deprivation will be listed by SECC and assistance under IAY will be provided to these households in order of priority to be determined on the basis of these indicators. This will abolish the APL-BPL distinction.

16. Inclusive Innovation Fund (IIIF)

Reference: Chapter 9

Current Scenario

India is amongst the top recipients in Asia for venture funds and Private Equity Funds. However these investments focus on relatively large and 'safer' investments. As a result of this business model bias in the flow of capital, the seed funding stage in the innovation pipeline which is high risk is quite constrained despite its relatively lower funding requirements.

Solution

To plug this gap and to promote inclusive entrepreneurship, the India Inclusive Innovation Fund (IIIF) has been set up. Set up with a seed investment of Rs. 100 crores, the fund will eventually be capitalised to a target size of Rs. 5000 crores to be achieved in phases and will go to scale with private capital.

Impact

The Fund will promote enterprises engaged in developing solutions in key areas such as health, education, agriculture, handloom, handicrafts and other small business enterprises combining commercial and social returns and ensuring access to capital for entrepreneurs from economically weaker sections of society.

17. Construction Industry Development Council (CIDC)

Reference: Chapter 19

Current Scenario

The Construction sector contributes about 8% to India's GDP and has significant forward and backward linkages with all other sectors. In terms of relevance, the construction industry was the second largest employer with around 31,000 enterprises in 2011. However, the industry has been facing a severe capacity crunch when it comes to technical manpower - the number of skilled workers at 3.73 million constitutes 9.1 percent of the total workforce, lower than 10.57 percent in 2005. The total training capacity is woefully inadequate - against a requirement of over 3.5 million trained tested and certified workers, the capacity available is about 0.5 million per annum. In terms of quality of output, most of the industry remains unorganised which negatively impacts the quality of delivery.

Solution

The Construction Industry Development Council (CIDC)—an industry association formed with the initiative of the Planning Commission— was set up to impart training and skill up-gradation for workers in the industry. The Council has taken steps in association with a few states such as Madhya Pradesh, Rajasthan, Bihar and Haryana for training and certification of construction workers. These states have made available the physical infrastructure of the ITIs situated in their States, where training and skill certification are provided by CIDC. The scheme needs to be extended to other states. The Ministry of Labour and DG (ET), NCVT (National Council of Vocational Training), have taken measures to launch skill certification initiatives through CIDC. While resources from the SDI (Skill Development Initiative) Scheme can be used, a dedicated fund for human resource development in the construction industry could supplement other sources of funding. This fund known as Construction Skill

Development Fund (CSDF) should be set up with 200 crores per year from the Building and other Construction Workers Welfare Cess and a matching amount from the industry.

Impact

These initiatives can facilitate training of at least 2,00,000 workers per year, and lead to significantly increased employment opportunities for construction workers.

II. Strategies to Improve Governance

1. Restructuring of Centrally Sponsored Schemes

Reference: Chapter 10

Current Scenario

A key deficiency of Plan programmes is that they continue to function within the confines of departmental silos without requisite convergence and with a high degree of duplication of effort, while many new programmes demand a new architecture based on innovative breaks with the past in significant respects.

Solution

A Committee was formed under Shri B.K. Chaturvedi, Member, Planning Commission to suggest measures and identify changes required in the restructuring of the CSSs. Each flagship programme will provide a flexible pool of financial resources to be used to facilitate and incentivise innovative practices that blaze a trail for others to follow during the Twelfth Plan period.

All CSS must have 20 per cent flexi funds (10 per cent for Flagship schemes). These should be utilised by the States to prepare schemes which are especially suited for the requirement of that State.

The physical and financial norms for the Schemes may be varied depending on the requirement of the State. A mechanism for developing flexibility in such norms as against the normal CSS prescription has been suggested.

Impact

The restructuring of Centrally Sponsored Schemes will go a long way to helping in addressing the need of state specific flexibility in designing the schemes/programmes instead of "one size fits all".

2. Effect of Goods and Services Tax (GST)

Reference: Chapter 3

Current Scenario

The central government's fiscal deficit was estimated at 5.9 per cent of GDP and the combined deficit of the Centre and the States expanded to nearly 9 per cent in 2011–12. High fiscal deficit not only crowds out private investment and puts upward pressure on interest rates, but underlines the threat of a ratings downgrade by international agencies which will negatively impact India's image as a viable investment destination for international capital as well increase borrowing costs.

Solution

With a view to reversing this trend of high government deficit, the Finance Ministry set up an Independent Expert Committee to advise on a credible medium-term road map which will bring the Central government deficit down to 3 per cent by the end of the Twelfth Plan. The 'Goods and Services Tax (GST)' is one of the key levers for fiscal correction that has been identified in this roadmap.

The introduction of GST will simplify the indirect tax structure, improve revenue mobility and re-define tax devolution between the centre and the States. In terms of fiscal calculations, while the Twelfth Plan assumes revenue neutrality of GST, there might in fact be positive spin-off effects of GST mainly through better tax compliance.

Impact

The implementation of GST will lead to the abolition of other taxes such as octroi, Central Sales Tax, State-level sales tax, entry tax, stamp duty, telecom licence fees, turnover tax, tax on consumption or sale of electricity, taxes on transportation of goods and services, etc. This will streamline the multiple layers of taxation that currently exist in India, making it easier for companies to focus on doing business rather than navigating the administrative machinery. While it seems to reduce the agency of the state governments, GST implementation can help kickstart growth and thus boost employment in the manufacturing sector.

3. PPP Promotion

Reference: Chapter 3

Current Scenario

India is an infrastructure deficient country. At the beginning of the Eleventh Plan, an increase in investment in physical infrastructure was envisaged from about 5 per cent of GDP during the Tenth Plan to about 9 per cent by 2011–12 (terminal year of the Eleventh Plan). It is estimated, however, that the Eleventh Plan saw an increase of only about 2.06 per cent of GDP in infrastructure investment as compared to the Tenth Plan with the public sector under-performing at 84 per cent of the target and the private sector over-performing to reach 113 per cent. Overall thus, three-fourths of this increase can be attributed to higher

private participation. However, lack of transparency and low efficiency in the process of awarding PPP contracts remain major road blocks. Additionally, State Governments do not have dedicated staff resources for handling PPP projects or for building the requisite capacity.

Solution

Setting up robust institutional structure for appraising and approving PPP projects: The government has decided to formulate standard documents for bidding and award of PPP concessions. Adoption of a standardised framework ensures transparency in the allocation of risks, costs and obligations while minimising the potential for disputes and malfeasance. The Model Concession Agreements (MCAs)... for PPPs in electricity distribution, power generation, modern storage facilities, hospitals, school education, drip irrigation and Industrial Training Institutes are under preparation. Standardised guidelines and model documents that incorporate key principles relating to the bid process for PPP projects have also been developed.

Dedicated Manpower for handling PPP projects: The plan has also highlighted the need for the Planning Commission to provide financial assistance (ACA) to the State Governments for the setting up a nodal Secretariat for PPP in each State which would be responsible for identifying areas in the respective States amenable to PPP, conceptualise the projects, initiate and approve feasibility studies, appraise and approve bid documentation, guide the process and so on. This would enable capacity building in the States. The total expenditure on this scheme over the next five years would be limited to about Rs. 100 crore.

Impact

The PPP model has thus been a successful one and if given a sustained boost, it can not only augment the government's resources but also fill infrastructure gaps more efficiently. A more robust and transparent institutional structure will boost the private sector's confidence and participation while plugging systemic leakages. At the level of the states, the setting up of the nodal PPP Secretariats would enable capacity building and allow them to harness PPP for their own development process rather than remaining dependant on central schemes.

4. Water Supply, Sewerage, Storm Water Drainage, Solid Waste Management and Environment Sustainability of the Cities

Reference: Chapter 18

Current Scenario

Lack of safe water and sanitation cause outbreaks of epidemics and Indian cities are every year affected by this. The impact of epidemics on the poor is much larger than on the non-poor for many reasons; firstly epidemics break out in areas where the poor live, their access

to safe water and sanitation is far lower than non-poor and their nutritional status being poor they easily succumb to the epidemics than the non-poor. Thus, lack of safe water and sanitation cause health disorders and keep the mortality rates high in general and among the poor in particular.

Solution

Universal coverage of urban areas: This involves the universal coverage of all urban population for the minimum levels of safe drinking and household-use water along with a clean toilet, sewerage, storm water drainage and solid waste management. The provisioning of basic water and sanitation should be de-linked from issues of land tenure and legal status. These services should be provided on the clear understanding that this provision does not automatically translate into legal entitlements in other spheres, especially as regards legal rights to the land and/or dwelling space.

Identification and reduction of leakage and preventive maintenance: These measures would be promoted as an integral part of the operation and maintenance of the water supply system on a regular basis. This would help save precious quantities of treated water and increase revenues to make systems self-sustaining. 100 per cent metering of water is required for recovery of reasonable user charges and conservation.

Impact

Such measures can often delay the need to immediately increase capacities of the existing schemes, which are very often quite capital intensive, while triggering significant improvements in service delivery. Metering will help increase the total quantum of water available and consequently amplify the quantum of water available for supply. Metering will also lead to reduction of wasteful use of water thus increasing efficiency and sustainability of the water supply system.

5. Private Sector Role in Higher Education

Reference: Chapter 21

Current Scenario

The Private sector has contributed significantly to higher education expansion during the Eleventh Plan and private higher education now accounts for 58.5 per cent of enrolments. However, for-profit entities are not permitted in higher education and the non-profit or philanthropy driven institutions are unable to scale-up enough to bridge the demand-supply gap in higher education.

Solution

The not-for-profit status in higher education should, perhaps, be re-examined for pragmatic considerations so as to allow the entry of for-profit institutions in select areas where acute shortages persist. This should, however, be subjected to the necessary oversight and accreditation arrangements to ensure quality and equity. For-profit private higher education can be taxed and the revenue from it can be channelled into large scale scholarship programme to promote equity as is practised in Brazil and China.

At the same time, innovative ways have to be found to encourage the infusion of more private capital in the traditional not-for-profit higher education. Some proposals that require serious consideration include: (i) enabling liberal financing options for the sector, like allowing private institutions to raise funds through public offerings of bonds or shares; (ii) changing the legal status of the sector to attract more investors, like allowing all types of institutions to be established under Section 25 of the companies Act and allowing existing trusts and societies to convert to institution under Section 25 of the companies Act; (iii) giving priority recognition to the sector, like providing it 'infrastructure' status with similar, financial and tax treatment.

Impact

The provision to allow private section to establish more for profit higher education institutions under Section 25 of the Companies Act would create robust access to youth population for enrolling into higher education institutions.

6. Simplifying Labour Laws

Reference: Chapter 22

Current Scenario

The multiplicity of labour laws administered both by the Central and the State governments are not conducive for the congenial development of the factory sector. The unorganised sector which constitutes 84 per cent is outside the purview of the labour laws, while the 16 per cent organised sector is overburdened with regulatory interference at all levels. There is need to simplify labour laws both at the Centre and the State level.

Solution

Ensure speedy resolution of industrial disputes, particularly the collective disputes which have a bearing on law and order, the District Collector or the Sub-Divisional Magistrate may be appointed as Conciliatory Officers.

A comprehensive social security must be put into place for workers in the organised sector, which provides for pension, medical insurance and unemployment benefits that are seamlessly transferable across employers in all sectors of the economy. Suitable provisions

need to be made for workers in the unorganised sector, where their own contributions can be supplemented by some support from the Government.

At least labour intensive manufacturing industries like textiles and garments, leather and footwear, gems and jewellery, food processing and so on must be permitted to adjust its labour force, in response to fluctuations in demand. The focus should be on promoting labour market flexibility without compromising fairness to labour.

Impact

Simplification of labour laws will help industry's flexibility in adjusting human resources requirements according to their demand.

7. India Backbone Implementation Network

Reference: Chapter 13

Current Scenario

Business dealings in India are currently quite adversarial in their approach. This is aggravated by lack of coordination amongst government ministries and the relatively poor quality of interaction between business associations and government, which leads to bureaucratic hurdles and seeds systemic inefficiencies. As a result, despite availability of raw materials as well as a consumer base, growth in India's manufacturing sector has so far been skewed and inadequate.

Solution

The Twelfth Plan proposes the setting up of a backbone organization, the India Backbone Implementation Network (IBIN) which will catalyse the ecosystem with specialised skills for consensus building and programme management. Such an organization will ensure more effective coordination amongst agencies, as well as consultation amongst stakeholders. The IBIN will aim to provide tools to resolve not just industry issues, but any national priorities that involve multiple stakeholders and would benefit from such processes.

Impact

Based on evidence from examples of such organizations in many countries, a backbone organization will resolve policy logjams, ensure a more collaborative learning process, and generate exponential gains for the sector. Since the structure of the organization emphasizes multi-stakeholder engagement, it will also promote decentralized decision-making. The IBIN's effects will be felt not just in manufacturing, but as a broad-based movement of better collaboration and coordination.

8. Resettlement and Rehabilitation Provisions for those displaced by the acquisition of Non- Agricultural Land

Reference: Chapter 6

Current Scenario

Land is an essential requirement for urbanization and rapid industrialization to proceed unimpeded. Government also needs to acquire land for a variety of public purposes, including human development and infrastructure projects. People displaced by development are estimated at 60 million, and only a third of these are estimated to have been resettled in a planned manner. Most of these people are the asset-less rural poor, marginal farmers, poor fish-folk and quarry workers. Around 40 per cent of those displaced belonged to Adivasis and 20 per cent to Dalits. The legal framework around land is outdated based on colonial principles of "eminent domain" under which the state can acquire land at prices that don't reflect market prices.

Solution

An unequivocal commitment to imaginatively exploring ways of rebuilding the livelihoods of those adversely affected by development projects - The comprehensive R&R package for landowners and those who have lost their livelihood includes: Subsistence allowance at `3000 per month per family for 12 months. The affected families shall be entitled to: (i) Where jobs are created through the project, mandatory employment for one member per affected family or (ii) `5 lakhs per family or (iii) `2000 per month per family as annuity for 20 years, with appropriate index for inflation. The option of availing (i) or (ii) or (iii) shall be that of the affected family. If a house is lost in rural areas, a constructed house shall be provided as per the Indira Awas Yojana specifications. If a house is lost in urban areas, a constructed house shall be provided, which will be not less than 50 sq mts in plinth area. In either case the equivalent cost of the house may also be provided in lieu of the house as per the preference of the project affected family One acre of land to each family in the command area, if land is acquired for an irrigation project. 50000 for transportation. A one-time 'Resettlement Allowance' of 50000.

Other highlights of the law include provision of infrastructural amenities in the resettlement area.

Impact

A strong Land Acquisition Law would mean that the population currently ravaged by the growth of development programmes would have greater say in controlling their own land resources.

9. Integrated Action Plan (IAP) for select backward and tribal districts

Reference: Chapter 17

Current Scenario

Significant steps towards improving housing in rural India are taken through Indira Awaas Yojana (IAY) and assistance from State Governments and financial institutions/banks. During the Eleventh Plan, about 30 lakh houses were constructed under various rural housing schemes of State Governments. Financial assistance provided under IAY was raised twice during the Eleventh Plan, on 1 April 2008 from Rs. 25000 and Rs. 27500 (for hilly/difficult areas) to Rs. 35000 and Rs. 37500 respectively and to Rs. 45000 and Rs. 48500 on 1 April 2010. The higher assistance is also provided to districts under the Integrated Action Plan (IAP) for select backward and tribal districts. Progress on some of these innovative features that drive towards convergence with other rural infrastructure schemes like Smokeless Chullahs, Bio-Gas Plant, Kitchen Garden, Life Insurance Scheme, Health Insurance Scheme has been slow.

Solution

It is proposed to increase the unit assistance for house construction under IAY to Rs. 60000 and to Rs. 65000 in hilly/difficult areas during the Twelfth Plan, with an increase each year to absorb rising costs of material and labor. At the same time, DRI loans for IAY families will be enhanced up to `50000 at 4 per cent rate of interest, along with extended repayment tenure up to 15 years. Provision of DRI loans for IAY beneficiaries will be made obligatory on the part of the banks given the investment that the government commits when sanctioning an IAY house.

Impact

This will ensure good quality housing. Banks will develop standard processes that are simple and hassle-free to enable easier access to DRI loans by beneficiaries.

10. Land Reforms: Modernization of Land Records

Reference: Chapter 6

Current Scenario

Accurate and updated land records are a veritable lifeline for millions of small and marginal farmers in India. They secure them against a range of vulnerabilities and allow them to access credit and agricultural inputs, as also the benefits of various anti-poverty programmes. Chaotic land management results in sporadic encroachments and fratricidal litigation, at great cost to the poor. It also creates a governance regime within which rent seeking and exploitation of the weak flourish unchecked.

The current system of land registration in India is based on the Registration Act, 1908, which provides for registration of deeds and documents, and not titles. Only the transaction is recorded. The transfer of ownership title remains merely presumptive.

Solution

National Land Records Modernization Programme (NLRMP) formed in 2008. The main aim of the NLRMP are The main aims of NLRMP are: 1) To usher in real-time land records 2) Automated and automatic mutation 3) Integration between textual and spatial records 4) To ultimately replace the present deeds registration and presumptive title system with that of conclusive titling with title guarantee.

Abolition of stamp papers and payment of stamp duty and registration fees through banks.

Impact

Real-time records will be available, which will be tamper-proof. Automatic and automated mutations will significantly reduce scope for fraudulent deals. Reduced interface with the registration bureaucracy.

11. Restructuring of Backward Region Grants Fund (BRGF)

Reference: Chapter 11

Current scenario

The experience of Special Area Programmes has made it abundantly clear that the persistence of backwardness is not a problem that can be solved merely with a generous infusion of funds. It is increasingly clear that overcoming underdevelopment is critically dependent upon the robustness of the institutional structure of governance in these areas. This is the key binding constraint on their very capacity to absorb more development funds.

Solution

The support being provided in the Twelfth Plan through this BRGF window for these districts would be used in building capacities and developing and implementing Plans in a bottom-up and participatory manner. The Centre will not specify anything beyond this about the heads on which this money would be spent, so long as the districts adhere to this decentralised process of formulating the programmes in convergent manner.

Criteria for Selection: The criteria for selection of areas under BRGF have also come in for criticism. The Twelfth Plan proposes that we rely only on the relatively unimpeachable data made available through Census, 2011, for selection of districts and sub-districts. The criteria of inclusion of districts and sub-districts under the new BRGF would be:

- Percentage of agriculture workers/total workers (economic backwardness)
- Percentage of SC + ST population (social backwardness)
- Female literacy rate (educational backwardness)
- Percentage of households without electricity (infrastructure backwardness)

Impact

The restructured BRGF will focus on all three levels: district, sub-district and supradistrict. Bihar and West Bengal Special Plans, as also the Supra-district Components of the KBK and Bundelkhand packages, will continue to be overseen by the Planning Commission. The district-level programmes like the IAP and the District Component of existing BRGF will be reorganised into a new programme, where some flexi-funds would be made available to the district administration (more in Left Wing Extremism [LWE] districts) to fill in the critical gaps, while the bulk of the programme will be implemented through PRIs.

12. Pradhan Mantri Gram Sadak Yojana (PMGSY) II

Reference: Chapter 15

Current Scenario

The Eleventh Five Year Plan (2007–12), and the Tenth Plan before it, recognised that rural connectivity is a key component of rural development and poverty alleviation in India. One of the main mechanisms for enhancing rural connectivity has been the Pradhan Mantri Gram Sadak Yojana (PMGSY), a Centrally Sponsored Scheme (CSS), launched on the 25 December 2000. Evidence from several impact evaluation exercises on PMGSY indicates that the scheme has managed to generate multiple benefits in the rural economy including increased direct employment, improved access to markets, and the promotion of formation of human capital by improving access to schools and health facilities. However, the PMGSY has achieved only 53 percent of its initial targets.

Solution

Launch PMGSY-II during Twelfth Five Year Plan on sharing basis to consolidate the existing rural road network. This scheme would cover up-gradation of existing selected rural roads based on a criterion to make the road network vibrant, on a sharing basis with the States. The selection of routes would be with the objective of identification of rural growth centres and other critical rural hubs.

Impact

While NHs, expressways and bridges/ ROBs promise overall development, including strengthening and improvement of riding quality, the PMGSY scheme will continue to generate positive externalities for the rural economy via employment, access and connectivity.

13. National Health Mission

Reference: Chapter 20

Current Scenario

The Eleventh Plan had suggested Governance reforms in public health system, such as performance linked incentives, devolution of powers and functions to local health care institutions and making them responsible for the health of the people living in a defined geographical area. NRHM's strategy of decentralisation, PRI involvement, integration of vertical programmes, inter-sectoral convergence and Health Systems Strengthening has been partially achieved. Despite efforts, lack of capacity and adequate flexibility in programmes forestall effective local level planning and execution based on local disease priorities. Professional procurement agencies on the lines of Tamil Nadu are still not in place at the Centre and most States making the process fragmented, with little forecasting or use of the power of monopsony. Wide variation in the performance of health facilities across states have been reported with Tamil Nadu topping and UP and MP at the bottom, pointing to the need for learning from best practices within the country through state level initiatives.

Solution

The broad and flexible governance structure of the National Health Mission would be used to seek willing participation of all sectoral agencies, and civil society in identifying risks and planning for their mitigation, and integrated delivery of quality services. States would be advised to merge the existing governance structures for social sector programmes, such as drinking water and sanitation, ICDS, AIDS control and NRHM at all levels, pool financial and human resource under the leadership of local PRI bodies and make multi-sectoral social plans to collectively address the challenges.

The existing National Programme Coordination Committee (NPCC) of NRHM will be expanded to serve the National Health Mission. It will be made more representative of all social sectors, sub-sectors within the health sector, and include expertise on monitoring and independent evaluation. The deliberations in this committee will also be made democratic, with an effort to arrive at decisions by consensus. All the four Secretaries of the MoHFW will be on this committee, which can also serve as a forum for coordination within the Ministry. Practice and promotion of AYUSH in the States would be carried out under the broad umbrella of the National Health Mission. A revamped National Programme Coordination Committee of the National Health Mission with Secretaries of all the departments under the MoHFW as members would provide the funding and programme guidance for convergence and main-streaming of AYUSH in the health care system.

E-governance systems that inter-connect all licensing and registration offices and laboratories, GPS based sample collection systems and online applications for licensing would be introduced. A repository of approved formulations at both State and national levels would be developed.

In order to ensure that plans and pronouncements do not remain on paper, a system of accountability shall be built at all levels, namely Central Government reporting to the Parliament on items which are its business, States reporting on service delivery and system

reforms commitments undertaken through the MoU system, district health societies reporting to States, facility managers reporting on health outcomes of those seeking care, and territorial health managers reporting on health outcomes in their area. Accountability shall be matched with authority and delegation; the MoHFW shall frame model accountability guidelines, which will suggest a framework for accountability to the local community, requirement for documentation of unit cost of care, transparency in operations and sharing of information with all stakeholders.

Impact

The gains of the flagship programme of NRHM will be strengthened under the umbrella of National Health Mission, which will have universal coverage. The key elements of the strategy that would be followed in the Twelfth Plan are, substantial expansion and strengthening of the public sector health care system to meet the health needs of rural and even urban areas; financial and managerial systems will be redesigned to ensure more efficient utilisation of available resources, and to achieve better health outcomes; coordinated delivery of services within and across sectors, delegation matched with accountability, fostering a spirit of innovation are some of the measures proposed to ensure that 'more can be done from less for more' for better health outcomes; and to focus on strengthening the pillars of the health system, so that it can prevent, detect and manage each of the unique challenges that different parts of the country face. The National Health Mission will incorporate the core principles of Universal Coverage, Achieving Quality Standards, Continuum of Care and Decentralised Planning.

14. Labour Market Information System (LMIS)

Reference: Chapter 22

Current Scenario

Currently there is no common platform where industry, job seekers and government can share information and take informed decisions. Prospective employees may acquire skills which have little or no demand or may take a career path which has little relevance in the market. The government does not have reliable data source of industry demand/available skills and the labour market conditions with the result effective policy decisions impacting training and enhancing employment potential of youth cannot be taken. This situation is disappointing for both prospective employers and employees resulting in job mismatch and low and inferior quality output.

Solution

The implementation of a Labour Market Information System (LMIS) would pave the way for a shared platform providing quantitative and qualitative information and intelligence on the labour market to all the stakeholders for making informed plans, choices, and decisions

related to their business requirements, career planning, education and training programmes, job search, recruitment, labour policies and workforce investment strategies.

LMIS would facilitate formulation of effective policies for filling the skills gap; evaluating results of labour related policies and programmes; providing key indicators on demand and supply labour. LMIS would assist the job seekers take informed decisions about their future career development by providing information on the needs of the labour market; identify current and future job market opportunities; provide analysis of the labour market based on the economic development and also enable employers take decisions about upgrading their employees skills; access information on skills available in the labour market; different labour characteristics such as labour policies, labour costs and so on.

Impact

At present there is a huge deficiency in access to national level database of skilled manpower. The industry also faces asymmetric information in demand and supply of skilled manpower. The new initiative of LMIS would be an important tool to bridge the demand supply gaps in availability of skilled manpower.

15. Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY)

Reference: Chapter 14

Current Scenario

RGGVY scheme was launched by the Government of India in April 2005 for providing access to electricity to all rural households. The scheme involved electrification of all un-electrified villages plus a free connection for BPL households by providing a subsidy of 90 per cent of the total project cost, where the remaining 10 per cent was to be borne by the Rural Electrification Corporation (REC) as loan. As on 31 March 2012, out of the total of 112795 villages under RGGVY 104496 villages have been completed. Some 10000 remote villages are to be covered by the MNRE through non-conventional sources. The gap is primarily in the States of Bihar, Jharkhand, Odisha and Assam.

Some deficiencies have been observed in implementation:

- 6000 villages electrified till December 2011 still not energized due to lack of supporting resources
- Access to electricity in rural areas is still limited, especially in smaller hamlets. The traditional approach to policy and planning in power has assumed gender neutrality, thus failing to recognise that the needs of men and women can differ. Attention needs to be paid to livelihood activities of women and to their concerns of safety, security such as street lighting, healthcare, education and so on.
- Poor financial health of utilities and high cost of power act as a disincentive for States to give new connections.

- Absence of viable revenue model has hindered larger access to new consumers

Solution

Despite the provision of electricity connections in the 11th Plan, energy needs still remain unmet. This gap needs to be bridged in the 12th Plan along with a need to upgrade transformer capacity. The progress of release of APL connections is slow on account of poor supply of electricity, long delays in processing of applications, and inadequate transformer capacity. This process needs to be simplified by enabling better governance structures. A mechanism for efficient billing needs to be put to practice to avoid delays, and limit outstanding bills. States need to find franchisees for Discoms for universal meter reading and billing. The Plan also recommends that detailed project reports (DPRs) be prepared in a structured manner to ensure quality standards and to avoid mis-reporting.

Impact

Studies indicate that electrification alters the household energy mix by substituting traditional kerosene-based lighting, thus resulting in energy and financial savings. Electrification would also provide better security within the villages and help increase mobility especially for rural women, by increasing safe spaces and mechanizing some household chores.

16. National Rural Drinking Water Programme (NRDWP)

Reference: Chapter 17

Current Scenario

As against the target of 7,98,967 habitations for coverage under NRDWP during the Eleventh Plan, the coverage up to 31 March 2012 was 6,65,034 (83 per cent). States of Jharkhand, Chhattisgarh, Nagaland, Madhya Pradesh, Orissa, Himachal Pradesh and Tamil Nadu have exceeded their targets, whereas Sikkim, Punjab, Assam, Arunachal Pradesh and Jammu & Kashmir have reported low (less than 50 per cent) achievement against targets. The difficulty has been that even as coverage becomes universal, there is a growing problem of 'slip back', with habitations suffering a fall in the water table and water quality, especially given the growing dependence on groundwater. Poor operation and maintenance has resulted in high rates of attrition and dilapidated facilities because stakeholders do not feel a sense of ownership over the facility created and in the absence of sufficient support structures and professional capacities, upkeep suffers.

Solution

Twelfth Plan envisages a major change in the way NRDWP projects are to be run- Goal has been kept at 55 lpcd for the Twelfth Plan to provide households with safe piped drinking water supply within their household premises or within 100 meters radius from their

households without barriers of social or financial discrimination. A part of NRDWP outlay will be set apart for integrated Habitat Improvement Projects to provide housing, water and sanitation facilities in rural areas at par with urban areas.

The Ministry of Drinking Water Supply and Sanitation has devised a Management Devolution Index (MDI) to track and incentivize more substantive devolution of functions, funds and functionaries to the Gram Panchayats. The subsidiarity principle will be followed and decisions made at the lowest level possible especially on issues like location, implementation, sustainability, O&M and management of water supply schemes, while retaining an umbrella role for the Gram Panchayats for effective implementation.

Impact

All new drinking water supply schemes will be designed, estimated and implemented to take into account life cycle costs and not just per capita capital costs. All Government schools and anganwadis (in Government or community buildings) will be provided with water supply for drinking and for toilets as per relevant quantity norms by convergence of NRDWP for existing schools and SSA for new schools set up under SSA.

Grassroots level participation will lead to capacity building of members of the Village Water and Sanitation Committees. By 2017, at least 35 per cent of rural population will have individual household connections.

17. Improving Urban Transportation

Reference: Chapter 18

Current Scenario

The National Urban Transport Policy 2006 calls for increasing the share of public transport in our cities from 22 per cent to 60 per cent. However, the achievements under the Eleventh Plan especially in terms of an extension of metro rail network and provision of projects as well as buses under JNNURM to improve public transport, now need to be further built up under the Twelfth Plan via appropriate legislative, institutional and financial arrangements under the plan. Besides incentives for promoting public transport, effective measures are needed to disincentivise the use of private transport, along with creation of an affordable and efficient public transport network.

Solution

Currently the Metro Act 1978 provides for formations of a Metro Advisory Board for every Metro project to assist the Government in implementation and running the project. In view of the growing importance of rail-based mass urban transit, there is a requirement of a national level organization for research, drawing of specifications and standards, developing appropriate financing model of MRTS projects and so on. The Ministry of Urban Development should initiate a proposal for setting up an apex institution namely the

National Urban Rail Transit Authority (NURTA) to promote rail based mass urban transport in the country. For the Twelfth Plan period, the working group constituted by the Planning Commission on financing urbanization worked out the requirement of investment for the urban transport sectors.

The Ministry of Urban development may initiate a proposal for setting up a Centre of excellence for rail based mass transit system which should promote research in all the major components of such system viz. civil network, rolling stock, tracks and signaling.

Impact

This ensures improvement of urban roads, street lights, traffic management system, mass transit and capacity building.

Fostering innovation in such capital intensive systems would reduce dependence on imports for projects in the country and would help India emerge as an exporter of this equipment.

18. Public Private Partnership (PPP) in Railways

Reference: Chapter 15

Current Scenario

It is estimated that the infrastructure sector will need investment of one trillion dollars in the Twelfth Plan. Of this, major share will be in the transport sector. Given the limitation of public resource, private investments will have to be emphasised and expanded. A Public-Private Partnership (PPP) regime has already been put into operation in road sector very successfully. While in Ports, Airports, Railways and Inland Waterways, there have been efforts in private investments in varying degrees, there is a need to step up an investment particularly in the railways. As on date, the Indian Railways have a large shelf of on-going projects whose completion would require about Rs. 2,25,000 crore. It is estimated that the Indian Railways would not be able to generate sufficient funds internally, through borrowings and from budgetary support for meeting the investment requirements of the Twelfth Plan. The shortfall would be met through private investments in PPP projects.

Solution

Investments in Railways can be stepped up with the help of PPP. So far, such investments have been extremely small. PPP Projects related to rolling stock manufacturing units, modernisation of railway stations, multifunctional complexes, logistics parks, private freight terminal, freight train operators, liberalised wagon investment schemes, Dedicate Freight Corridors and so on which are in pipeline offer excellent opportunities for private investment. These need to be speedily executed in the Twelfth Plan.

Impact

Like the growth and success of PPPs in the Roads sector, PPP mode would help in channelizing large investments in the Indian Railways sector that have been closed to private sector participation since the very beginning. Newer initiatives for passenger and freight linkages would benefit under this mode.

19. Modernization of Railways

Reference: Chapter 15

Current Scenario

Indian Railways is the fourth largest railway network in the world with a total route length of 64460 km of which approximately 33 per cent is electrified. However, the growing need for efficient transportation coupled with a rise in population has not been met by adequate expansion of railway network in the country. Only 11864 km of new lines have been added since independence. There is no railway network in the Himalayan and NER.

Solution

The network needs extensive modernisation, increase of speeds, improvement in safety and modernisation of rolling stock to meet the needs of a rapidly growing economy. Some of the essential strategies included in the Twelfth Plan are: Dedicated Freight Corridors (DFC), high capacity rolling stock, last mile rail linkages and port connectivity. Owing to growth of rail based intermodal traffic at a rate of 15.5 per cent in the period 2007–08 till 2011–2012, policies in the Twelfth Plan aim to expand containerisation business and improve connectivity to the western and eastern parts of the country.

Impact

The above strategies would spin off effects in the form of larger number of passenger services, faster passenger services, quicker freight movement, and help in decongesting major terminals, thereby improving access to larger population. The DFC project shall especially bring down the percentage of food grains wasted due to lack of connectivity in the perishable food-producing states of Eastern and Western parts of the country.

20. National High Speed Rail Authority (NHSRA)

Reference: Chapter 15

Current Scenario

There are 14896 unmanned and 17839 manned level crossings on Indian Railways network as on 1 April 2011. These level crossings contribute to 30 per cent of fatalities in Railway mishaps and statistically contribute to about 40 per cent of accidents of Indian Railways.

Solution

A Corporate Safety Plan, 2003–13 has been prepared in this respect along with appointing a High Level Safety Review Committee (Kakodkar Committee) for suggesting measures on safety on Railways. In addition to safety, Twelfth Plan also proposes to set up a National High Speed Rail Authority (NHSRA), an autonomous body through a Bill in Parliament for implementation of High Speed Rail Corridor projects of Indian Railways.

Impact A body such as NHSRA shall enable provision of improved safety systems, develop a crashworthy' structural design absorbing high impact in unfortunate cases, build superior fire retardant properties, provide Intelligent fire surveillance and GPS-based fog safe device to bring about overall safety in the sector and bring down the incidence of accidents.

Impact

A body such as NHSRA will enable provision of improved safety systems, develop a crashworthy' structural design absorbing high impact in unfortunate cases, build superior fire retardant properties, provide Intelligent fire surveillance and GPS-based fog safe device to bring about overall safety in the sector and bring down the incidence of accidents.

21. North East Region (NER)

Reference: Chapter 15

Current Scenario

The characteristics of the North East region (NER) make it imperative for more organised inter-sectoral transportation planning: its remoteness from the rest of India; several difficult hilly terrain; presence of many rivers that permit significant IWT. However, there are also difficulties in engineering transport infrastructure: long border with neighbouring countries, increasing the importance of transport infrastructure from both strategic and security viewpoint; and 8 states, each having its own requirements and priorities. A region-wide transport planning for the four transport sectors namely: Roads, Civil Aviation, Rail, and IWT, in an integrated framework, is thus essential.

In addition, connectivity of NER with the far eastern region, including Myanmar, Bangladesh and Thailand, would be one of the focus areas for economic development of the region and expanding economic activities including trade and commerce in the Twelfth Plan. Inland Waterways Transport (IWT) connectivity with Bangladesh will need also special emphasis.

Solution

Railways: In the Twelfth Plan, the on-going work for connecting all state capitals in the NER would be completed. While state capital of Arunachal Pradesh, Manipur, Nagaland, Mizoram and Meghalaya are to be connected with the rest of the country, the states of Assam and Tripura already have connectivity. The Twelfth Plan is targeted to expedite the work on railways so that all state capitals in the NER are on the rail map by 2020.

Roads: For special emphasis on the NER, the SARDP-NE programme was launched for the development of National Highways, State Highways and other roads, as a result of which investments for road development in the region have been increasing. However, there are implementation delays and projects are not getting completed on time. Hence there is a great need for capacity augmentation and institutional strengthening in the areas related to evolve projects, preparation of project reports, implementation, monitoring and management of projects in the NER as a whole.

Air Connectivity: Given the strategic importance of the NER, a new policy with a focus on small aircrafts can be framed in order to reduce in the physical exclusion of the region. In this regard, development of existing airports and operationalisation of non-operational airports is imperative to improve connectivity along with the neighbouring countries as well. Multi-utility based air services that enable movement of high value cargo can be instrumental in improving the economic vitality of the region along with establishing state of the art weather and navigation information systems in order to provide uninterrupted and reliable air services, and preventing accidents. It has been proposed that Guwahati Airport be developed as a major gateway to South East Asia, both for passenger and freight traffic.

Inland Waterways Transport (IWT): NER are exporters of bulks of Tea, oil, cement and coal and importers of food grains, fertilisers and petroleum products. The existing Indo-Bangladesh Protocol on IWT needs to be extended for at least 20 years to provide stability to the trading environment. This would also promote public private partnerships in the development, management and operation of IWT in the NER.

Impact

Although, there are many schemes and programmes specially targeting transport infrastructure development in the region, there have been severe implementation bottlenecks and gaps. Inclusion of NER through better infrastructure connectivity should be one of the main targets of the Twelfth Plan that would require important governance decisions and monitoring of the set targets.

22. National Telecom Policy (NTP)-2012

Reference: Chapter 16

Current Scenario

The sector stands at the cross roads of opportunities as well as challenges at the beginning of the Twelfth Plan. On the one hand, recent developments in the sector arising out of aberrations in the licensing and policy implementation have provided an opportunity for introspection. On the other, there is a need to sustain the growth momentum in the sector

achieved during the Eleventh Plan to realise the objective of inclusive growth. Additional challenges that need to be overcome include reach and access for all and insufficient technological development of 3G and 4G services.

Solution

National Telecom Policy (NTP)-2012 has been adopted against this backdrop to address all the key challenges before the sector in a holistic manner. NTP-2012 envisions support to platform neutral services in e-governance and m-governance in key social sectors such as health, education and agriculture that are at present limited to a few organisations in isolated pockets. NTP-2012 seeks to achieve Broadband on Demand and envisages leveraging telecom infrastructure to enable all citizens and businesses, both in rural and urban areas, to participate in the Internet and web economy thereby, ensuring equitable and inclusive development. The objective is to transform the country into an empowered and inclusive knowledge-based society, using telecommunications as a platform.

Impact

NTP 2012 will ensure availability of a variety of services to even the remotest of villages. It provides the enabling framework for enhancing India's competitiveness in all spheres of the economy. NTP-2012 envisions support to platform neutral services in e-governance and m-governance in key social sectors such as health, education and agriculture that are at present limited to a few organisations in isolated pockets.

23. Flexi-Fund for Rural Development

Reference: Chapter 17

Current Scenario

There is an increasing demand to give States much greater flexibility in spending decisions with respect to Government schemes as they have differing needs, priorities and levels of development and the 'one size fits all' model of Centrally Sponsored Schemes (CSS) does not allow these interstate variations to be adequately reflected.

Solution

The Ministry of Rural Development has proposed setting up a Rural Development Flexi-fund (RDF) of Rs.40000 crores (of which 70 per cent would be the Central share of Rs.28000 crore) with the intent to devolve a significant share of Central funds related to Rural Development to the States over the Twelfth Plan period directly through this Fund.

Impact

The scheme will incentivize innovation in service delivery, building sustainable rural infrastructure 'Greening' of rural development and devolution to and empowerment of PRIs.

This would ensure better targeting and focused projects on state-specific priorities. It would also send a powerful signal about the Central Government's deep commitment to cooperative federalism.

24. Creation of a dedicated cadre of social mobilisers at each Gram Panchayat level

Reference: Chapter 24

Current Scenario

The Panchayat is the fundamental platform for participatory democracy at the village level. While the original Constitutional definition of the Panchayat did not include its establishment in Scheduled Areas, The Provisions of the Panchayats (Extension to the Scheduled Areas) Act, 1996' (PESA) did extend the definition to Scheduled Areas. However, PESA's implementation has been shoddy, primarily due to the ambiguous administrative definition of a village. As a result, there is exclusion of women and marginalized citizens leading to ineffective representation.

Solution

The Twelfth Plan proposes the creation of a dedicated cadre of social mobilisers at each Gram Panchayat level, specifically assigned with the task of mobilising the Gram Sabha and ensuring the effective participation of the marginalised, as also spreading greater awareness of laws such as PESA and Forest Rights Act (FRA) and key flagship programmes of the government.

Impact

Better implementation of the Panchayat system in Scheduled Areas will allow Scheduled Tribes to better seek representation and government services. They will ensure that Gram Sabhas actually meet and become vibrant fora of participatory democracy, as visualised under PESA.

25. National Irrigation Management Fund (NIMF)

Reference: Chapter 5

Current Scenario

Water is a scarce resource and India fares quite poorly on water use efficiency comparisons. As per a study conducted by the Central Water Commission (CWC) in 30 completed major and medium irrigation projects, the average efficiency is 38 per cent. This does not compare well with 45 per cent in Malaysia and Morocco and 50–60 per cent in Israel, Japan, China and Taiwan. The absence or ineffectiveness of Water Users Associations (WUAs) is one of the reasons mentioned as a significant contributor to the gap between Irrigation Potential

Created (IPC) and the Irrigation Potential Utilised (IPU). Although a large number of WUAs are reported to have been formed in various States, only a few have actually been handed over the system. Successful functioning of WUAs is reported only in a few projects in Maharashtra, Gujarat, Andhra Pradesh and Orissa. The Twelfth Plan proposes major changes to strengthen these initiatives.

Solution

The Twelfth Five Year Plan proposes the setting up of a National Irrigation Management Fund (NIMF) to catalyse and undertake reforms in the water sector such as improving water use efficiency, participatory community based management of aquifers, regulation of groundwater, revamping irrigation/water resource departments and so on. The NIMF will also focus on Water Users Associations. Specifically, the fund will provide a bonus from each State's Irrigation Service Fee (ISF) allowable only if WUAs are allowed to keep 50 per cent of the ISF collected by them and their federations at the distributary level are allowed to keep 20 per cent of the ISF paid by irrigators.

Impact

This initiative will expand resources with WUAs, which are local bodies and their federations. They will thus be able to effectively undertake proper repair and maintenance of distribution systems. Overall the NIMF will increase their stake in water management taking governance to the local level.

26. Public Land Bank (PLB) for Land Reforms in the context of Agricultural Land

Reference: Chapter 6

Current Scenario

Land ceiling laws have not been implemented. Around 3 million hectares of land has been declared surplus so far, which is hardly 2 per cent of net sown area in India. About 30 per cent of this land has not yet been distributed as it is caught up in litigations.

83 per cent of farmers operate holdings of less than 2 ha in size, and the average holding size is only 1.33 ha. This is usually fragmented and un-irrigated land. They have inadequate financial resources to purchase and often depend on leasing in small plots, on insecure terms. They have limited access to formal credit. Hence they have few resources for land improvement or crop insurance or adequate inputs.

Legally, land leasing laws in most states either prevent marginal and small farmers from increasing the area they cultivate by leasing in land, or create tenurial insecurity for informal tenants/sharecroppers.

Solution

A strong case for legalizing tenancy and allowing leasing-in and leasing-out land with adequate safeguards to protect the interests of small and marginal farmers.

Enacting a law to recognise tenancies could freeze the informal land lease market in the short run. To guard against this, the Twelfth Plan proposes the creation of a Public **Land Bank (PLB)** at the panchayat level. This would regulate and rationalise land demand and supply. The PLB would take 'deposits' of land from landowners wanting to lease out their land, with the surety that they could withdraw their deposit when they wanted. The deposit could be for one season, one year, or three years and more. On deposit the farmers would get a small payment as incentive, the amount varying by the period of deposit (analogous to a current account, savings account, and fixed account in a financial bank). The incentive amount could be calibrated to a percentage of the prevailing average land rent in the panchayat. The landowner would receive an additional fee when the land is leased out.

Impact

The PLB would lease out the land under its command to specially designated categories of disadvantaged farmers, such as marginal farmers, women, dalits, and tribals, whether leasing as individuals or in groups. These lessees would get a guaranteed lease, fixed after assessing land quality, and in a consolidated plot where possible. Institutional finance and other support could also be provided.

27. Management Information System for the Mahatma Gandhi National Rural Employment Guarantee Scheme

Reference: Chapter 17

Current Scenario

The rate of growth of employment is reported to have slackened, in many segments of the rural economy, during the decade of reforms. Rural India has been plagued with critical problems like lack of purchasing power in rural areas, poverty, lack of productivity, agricultural vulnerability etc. Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) was introduced in 2006 as a people centred, demand-driven, self-selecting and rights-based scheme. In 2011–12, nearly 5 crore families were provided over 211 crore person-days of work under the programme. Over the last six years, MGNREGA has generated more than 1200 crore person-days of work at a total expenditure of over 166760 crores. However, there is significant room for improvement in the implementation of the scheme, to reduce corruption and generate awareness.

Solution

Twelfth Plan offers new guidelines as per which all the State Governments will ensure that the MGNREGA MIS will record the demand for work. Twelfth Plan also offers strengthening

of both preventive and ameliorative measures to address the issue of corruption. As in the case of Andhra Pradesh, social audits will be institutionalized by the State Governments. They have proved a great check on corruption and large recoveries have also been made. All States will also make an arrangement for a three-tier vigilance mechanism. Attention will also be paid to generate awareness among potential wage-seekers and set up systems that facilitate and rigorously record registration for work, issuance of job cards and application for work.

Impact

These steps will proactively detect irregularities in the implementation of the Act and follow up detected irregularities and malfeasance, including those identified during social audit, and ensures that the guilty are punished and recoveries of misspent funds duly made.

28. Technology-based monitoring of forest cover and biodiversity

Reference: Chapter 7

Current Scenario

The Forest cover and biodiversity across states in India has not been recorded or technologically mapped yet. There is no comprehensive data base available to map areas as ecologically sensitive or fragile. This is the primary reason for delays in environmental clearances for power projects, mining projects and other infrastructure or development initiatives.

Solution

The Twelfth Plan proposes technology-based monitoring of forest cover, biodiversity and growing stock including change-monitoring on periodical basis through dedicated satellite by 2017.

Remote sensing-based forest cover monitoring in close collaboration with Forest Survey of India, National Remote Sensing Agency and Indian Institute of Remote Sensing has been proposed. This initiative will be taken for developing a countrywide mosaic of high resolution satellite images (LISSIV, Cartosat) and overlaying polygons/grids of areas to be taken up for interventions. In order to achieve higher level of accuracy in the monitoring and evaluation system, a dedicated forest satellite for monitoring forest cover, NTFP (Non Timber Forest Produce) resource, bio-diversity on periodical basis along with change monitoring has been proposed. The improved real-time, web-based monitoring system under this scheme would be extended to other schemes by strengthening the Forest Survey of India (FSI) and Remote Sensing / Geomatics Units in the states.

Impact

A proposed scheme on Satellite based Forest Resource Assessment will put in place a system for technology based collection of baseline data and evaluation of forestry schemes with GIS mapping of areas under the Forest Rights Act 2006. Using technology tools like GIS to map forest cover, protected areas and biodiversity hot-spots can go a long way in ensuring effective and speedy environmental clearances, tackling rehabilitation issues for wildlife and infrastructure reasons and facilitate the holistic goal to conserve the diverse ecological wealth of our country.

29. Green India Mission

Reference: Chapter 7

Current Scenario

Forest Cover across states has been depleting rapidly particularly due to 'developmental initiatives'. Communities/villagers find no incentives in conserving the forests. On the other hand, indigenous population of the country feels threatened as depleting forests results in a loss of habitat. There are a few mechanisms that currently work towards incentivizing the communities directly for conservation for forests through revenue generated from Non Timber Forest Produce (or Minor Forest Produce). Also the JFMCs have not been able to deliver as it has failed to delegate power to the PRIs and hence do not deliver as effective income generation mechanisms.

Solution

Empowering Village Forest Committees/Joint Forestry Management Committees (JFMCs) for management of forest resources through the Green India Mission (GIM) to be operationalised in 2012–13.

The GIM has been conceived as a multi-stakeholder, multi-sectoral and multi-departmental mission, recognizing that climate change phenomena will seriously affect and alter the distribution, type and quality of natural resources of the country and the associated livelihoods of the people. GIM puts the "greening" in the context of climate change adaptation and mitigation and is meant to enhance ecosystem services like carbon sequestration and storage (in forests and other ecosystems), hydrological services and biodiversity; along with provisioning services like fuel, fodder, small timber through agro and farm forestry, and NTFPs. One of the primary goals of GIM is to empower communities through capacity building. GIM seeks to achieve afforestation targets through creation of enhanced livelihood generation options. Provisions have been kept for the GIM for increasing forest and tree cover on 2.5 m. ha area (non-forest through agro / social / farm forestry), improving quality of forest cover on another 2.5 m ha area, improving ecosystems services, and increasing forest based livelihood income and enhanced annual CO₂ sequestration.

Impact

In terms of impact assessment, GIM will green 10 million ha over the next 10 years including 1.5 million ha of degraded lands, afforestation and eco-restoration of 0.9 million ha of ecologically sensitive areas. The expert group estimates that the Green India Mission would help neutralize an additional 1.5 per cent of India's GHG emissions annually, bringing the total GHG removal by India's forests to 6 per cent by 2020. On ground, the GIM will effectively establish the link between forest conservation and local livelihoods. It will also serve as a platform for participatory approach for afforestation and create positive community incentives to conserve forests. From a governance point of view, it will also energize the Panchayati Raj Institutions (PRIs) to take ownership of common resources.

30. Convergent technology solutions to target rural India

Reference: Chapter 8

Current Scenario

India is witnessing tremendous economic growth. In recent years there has been a boost to science & technology in the country. For instance, our scientific output has reached to 3% of global output and the share of scientific publications emanating from universities increased from 15 per cent in 2003 to 31 per cent in 2012. But these are marginal improvements. The current improvements fall short of global standards. The investment in R&D remains at 1 per cent of gross domestic product (GDP). This needs to increase to 2 per cent of GDP and more, as has been the case with several developed and emerging economies for quite some time now. The role of S&T is paramount in sustaining the competitiveness of the nation. Even more important is the role of S&T to deliver practical and accessible solutions to the numerous issues of the mass population. In pursuit of these objectives the twelfth plan initiates Grand Challenge Programmes and launches PAN-India missions to address national priorities in various developmental sectors through the bottom-up approach, particularly in the areas of Health, Water, Energy and Food through consortia of institutions and agencies cutting across public and private sectors.

Solution

CSTRI: In order to promote convergent technology solutions for applications in rural India, a new Council for Science and Technology for Rural India (CSTRI) has been formed by Department of Science & technology under its social contract. Two facilitation centres - one at North East Institute for Science and Technology and other at Indian Institute of Technology, Madras at Chennai, have been established. Special schemes for vulnerable sections of the society will be taken through CSTRI. New programme viz. launching of model demonstration projects through CSTRI for rural application included under this objective have the number target as the success indicator.

CSIR 800: The programme on CSIR 800 that was launched during the Eleventh Five Year Plan for improving the quality of life and augmenting livelihood for the people at the base of the economic pyramid is being expanded during the Twelfth Five Year Plan. As a part of the programme, CSIR would address the needs of rural communities also through implementation of 24 identified CSIR Technology Enabled Villages (TECHVILS) across the country. The programme would be implemented in the following three stages: the REACH-TECH (to be transferred immediately), DEMO-TECH (to be transferred mid-way into the Plan) and INNOTECH (to be transferred by the end of the Plan period). Major R&D work under this programme relate to non-conventional energy, housing, potable water etc. Born out of the recent CSIR vision, the Mark I version of Soleckshaw has been designed, developed and prototyped by the CSIR's national laboratory, the Central Mechanical Engineering Research Institute (CMERI) at Durgapur, in a record time of eight months.

CSIR Special Centres for North-Eastern States, Lakshwadeep and Andaman and Nicobar Islands: CSIR during the Twelfth Plan would focus on special eco-regions of the country and facilitate their sustainable development through S&T intervention. The North-East region and the islands of Lakshadweep, Andaman and Nicobar have been chosen in this regard. CSIR's efforts would include promoting innovation and CSIR technologies for the north-eastern States and undertake S&T intervention towards disaster mitigation and sustainable development of the coral reefs in the Lakshadweep, Andaman and Nicobar Islands.

Impact

These programmes can engineer solutions that are energy and cost effective and can be disseminated to the people on mass scale.

31. Debt Restructuring Policy

Reference: Chapter 14

Current Scenario

As demonstrated in the Eleventh Plan, the financial health of utilities has resulted in underinvestment in the distribution network causing poor upkeep and maintenance. Consequently the quality of supply is hampered, leading to customer dissatisfaction and poor recovery.

Solution

The key focus of the Twelfth Plan has been to strengthen the performance of the distribution system to achieve improved financial viability of distribution companies (Discoms), to expand access to power in rural areas resulting in AT&C loss, and greater private sector participation

for achieving management efficiency. Since distribution is entirely the domain of States, the responsibility for improving distribution lies almost entirely with State Governments.

The following recommendations have been proposed:

- 50 per cent of the outstanding short term liabilities (STL) to be taken over by State Governments in order to provide full support to the Discoms for repayment of interest and principal and the balance 50 per cent of the STL will be rescheduled by lenders and serviced by the Discoms
- Restructuring loan to be accompanied by measurable action by the Discoms/States to improve the operational performance of the distribution utilities
- Setting up a Transitional Finance Mechanism in support of the restructuring effort of the State Government for their distribution utilities

Impact

Effective implementation of the restructuring package during the Twelfth Plan would send a powerful signal that the power sector is on the path of financial viability. It would also enable more extensive coverage and bring uniformity in billing and customer service of the utility across all its service areas.

32. New Exploration Licensing Policy (NELP)

Reference: Chapter 14

Current Scenario

The NELP was a major initiative to attract private investment into the oil and natural gas sector, with the NELP blocks being subjected to Government-prescribed allocation for uses and Government-approval pricing formula. However, questions have arisen regarding the interpretation of various clauses in the existing NELP contracts. Thus the existing NELP regime needs to be revised to ensure greater private investment including foreign investment in oil and natural gas blocks and increase new capacities for renewable energy. Since oil exploration is a global industry, the terms India offers must be comparable with those offered elsewhere. In this context, the entire structure of NELP contracts for oil and gas need to be reviewed.

Solution

There is a need to review the provision of pricing under Production Sharing Contracts (PSC) to clarify the extent to which producers will have the freedom to market the gas. Legally, gas as a resource belongs to the Government and the Government has the right to fix an appropriate price. However, if the intention is to attract private investment into this sector, the Government should state clearly what degree of pricing freedom will be given.

Eliminating the uncertainty that has arisen regarding gas pricing from NELP production sharing contracts by implementing a new design of contracts would facilitate private

investments. Implementing the recommendation of the Rangarajan Committee may also be an important input in finalizing this policy. Appropriate steps should be taken to resolve conflicts in existing contracts where the interpretation of the contract term is open to multiple options.

Impact

Policy revision can play an important role in obtaining various clearances for the upstream operators from multiple agencies of the Government. This review of policy would also essentially help tap a large number of discoveries which have been made under NELP but are yet to be appraised and developed.

33. Phase-II of the Rajiv Awas Yojana to enable access institutional credit to the Urban Poor

Reference: Chapter 18

Current Scenario

The urban sector in India faces two distinct but mutually linked sets of challenges. Firstly, the number of urban poor had increased by 34.4 per cent from 1973 to 2004. Secondly, the Government needs to guide the process of urbanization and ensure that basic services, for example, sanitation, water supply, and basic housing are provided to urban citizens expected to be around 600 million within 20 years. As per 2011 census, only 70.6 per cent of urban population is covered by individual connections and even a partial sewerage network is absent in 4861 cities and towns in India. Moreover, public transport accounts for only 27 per cent of urban transport in India. If these challenges are not tackled expressly, not only would India's cities get increasingly chaotic and choked, rural poverty will be converted to urban poverty with no gains to improvement of livelihoods of India's burgeoning population. Delay in approval process not only acts as a disincentive for the flow of private capital, it makes assembly of land more difficult besides time and cost overrun.

Solution

The scheme provides for measures to improve the flow of institutional credit to the beneficiary. These measures are expected to incentivize banks and other lending institutions to provide credit to slum dwellers. Since a large number of slums are located on prime urban land which has multiple socially productive uses, every effort should be made to economize on land use through higher FSI. This should include the involvement of the community in planning, execution, and analysis/feedback of various schemes. Schemes should encourage the creation of Community Based Organizations in slums, federated at a higher level into an association/ federation, eventually working to the administrative level of the ULBs with clear-cut, institutionalized frameworks mandating dialogue between ULB level functionaries and the community. Further measures to facilitate private sector participation should be

introduced. This includes capacity building and legislative arrangement for rolling out PPP projects for providing affordable housing.

Impact

This will help organizations to build on the community mobilization, participation and social audit, and evaluations guidelines provided for in Rajiv Awas Yojna (RAY).

34. Institutional Arbitration system in the Construction Sector

Reference: Chapter 19

Current Scenario

The Construction sector is a high cost sector. It has been estimated that the total cost of procuring, supervising and monitoring incurred by the project owner comes to about 22 percent of the cost of asset created. However, lack of standardisation of contract procedures and evaluation criteria, cost over-runs, etc lead to mis-interpretation of clauses and thus to disputes. According to a CIDC survey, 135,000 crores remains blocked in the construction sector over disputes. Since there is no provision for a neutral body to administer and supervise arbitration, there is an increasing tendency to appeal on grounds of 'misconduct' on the part of arbitrators taking the view that they have not been approved by any responsible organisation.

Solution

The Twelfth Plan recommends using the Institutional Arbitration system to appoint arbitrators and to guide dispute resolution. As per this, arbitrators are appointed from international, national or regional panels. Other features of this system are: having a code of ethics, which binds arbitrators at a pre-determined level of fees.

Impact

This system will hopefully improve the quality of arbitrators, manage arbitral fees and maintain close supervision and monitoring of arbitrator's progress. It will also meaningfully supplement the efforts of the Construction Industry Arbitration Council, which has taken up nineteen cases so far. These efforts will increase trust in construction contracts and dispute resolution methods, leading to increased construction activity and employment.

35. Improved Air Traffic Management

Reference: Chapter 15

Current Scenario

Both Air Space and Air Traffic Management infrastructure assumes critical importance in the context of the Indian Air Transport sector transitioning to the next growth phase in the Twelfth Plan. This would involve deployment of equipment relating to CNS (Communication Navigation and Surveillance) and Air Traffic Management Systems. The present Air Navigation Services (ANS) are monitored by the Airport Authority of India (AAI). It is imperative that the Air traffic control (ATC) be separate from AAI so as to be in line with the best practices in the world. Hence, it has been suggested that along with additional investment proposed in ANS infrastructure during the Twelfth Plan, an independent ANS be set up to manage capacity, safety, congestion and efficiency issues of air transport.

Solution

Recognizing the current scenario, Ministry of Civil Aviation constituted a Committee for formulating a next generation ANS master plan to enhance capacity and safety levels for facilitating higher air traffic movements in future. ANS infrastructure is targeted at greater integration and automation with implementation of state-of-the-art technologies including centralised Air Traffic Flow Management to facilitate alignment with traffic pattern. Existing software and hardware infrastructure would be upgraded or replaced. This would require an investment of Rs. 4400 crore during the Twelfth Plan of which Rs. 3700 crore would be in ANS infrastructure and air safety and Rs. 700 crore would be made for GAGAN project.

GAGAN, the Indian SBAS (Satellite based augmentation system) is a project jointly undertaken by the AAI and ISRO to achieve smooth transition to satellite based navigation and seamless air traffic management across continents. It is designed to provide additional accuracy, availability, and integrity necessary to enable user to rely on GPS for all phases of flight, from en route through approach, for all qualified airports within the GAGAN service volume.

Impact

GAGAN will provide the capability for increased accuracy in position reporting, thereby making possible high-quality Air Traffic Management (ATM). GAGAN will provide benefits beyond aviation to all modes of transportation, including maritime, highways, railways and public services such as defense services, security agencies, and disaster recovery management by aiding in search and rescue to locate the disaster zone accurately, telecom industry and personal users of position location applications. It would also cover huge area beyond Indian Territory, from Africa to Australia and provide support seamless navigation across the globe. The implementation of GAGAN and certification by 2014 will propel India as the only fourth country to have this facility in the world.

III. Strategies for Sustainability

1. National Mission for Sustainable Agriculture (NMSA)

Reference: Chapter 12

Current Scenario

The Eleventh Plan had made four conscious choices. First, with technology fatigue evident, it funded research better but emphasised on getting more from existing technology. Second, since one size does not fit all, it decentralised plan funds to encourage initiatives at State and lower levels. Third, aware of low public investment and food security needs, it increased Centre's spending on these, particularly in disadvantaged regions. Fourth, noting farmer distress, it tried to focus not just on production but also on farm incomes, stressing service delivery and suggesting encouragement of group activity with land and tenancy reforms put back on the agenda. Compared to the original green revolution that built on the best, this strategy sought to deliver faster growth, that is, more inclusive, more stable and less concentrated spatially. Nonetheless, there is a wide demand for a second green revolution with more irrigation and better crop-specific technologies, with some even claiming that Bt cotton has been the only recent success. The Twelfth Plan accepts the proposition that a greater technical thrust is needed, and the strategy for agriculture should take this into account.

Solution

A major new mission that will be launched during the Twelfth Plan is the National Mission for Sustainable Agriculture (NMSA). Conceived originally as part of the National Action Plan on Climate Change (NAPCC), this aims at transforming Indian Agriculture into a climate-resilient production system through adoption and mitigation of appropriate measures in the domains of both crops and animal husbandry. Since a number activities relating to sustainable agriculture are already parts of other proposed missions, NMSA as programmatic intervention, will primarily focus on synergizing resource conservation, improved farm practices and integrated farming for enhancing agricultural productivity especially in rain-fed areas. Key deliverables under this mission will be developing rain-fed agriculture, natural resource management, enhancing water and nutrient use efficiency, improving soil health and promoting conservation agriculture.

Impact

It is hoped that the NMSA will have the following impact on agriculture in the country:

- Promote measures for in-situ conservation and efficient use of rainwater
- Invest in shared and protective/supportive irrigation

- Enhance sustainability of natural resources, reducing costs, increasing efficiency of resource use and improving total factor productivity.
- Strengthen the extensive livestock systems depending wholly or partly on commons and agriculture residues through intensive efforts in health care, feed, fodder, drinking water, shelter, institutions and so on.
- Invest in decentralised and local institutional capacities that enable a shift away from onetime Planning to iterative 'Planning—Implementation—Learning' cycles anchored by local institutions.
- Enhance institutional capacities in local governance and resource management, particularly related to Commons and strengthen Panchayat Raj, cooperatives and other stakeholder institutions.

2. Green India Mission

Reference: Chapter 7

Current Scenario

Forest Cover across states has been depleting rapidly particularly due to 'developmental initiatives'. Communities/villagers find no incentives in conserving the forests. On the other hand, indigenous population of the country feels threatened as depleting forests results in a loss of habitat. There are a few mechanisms that currently work towards incentivizing the communities directly for conservation for forests through revenue generated from Non Timber Forest Produce (or Minor Forest Produce). Also the JFMCs have not been able to deliver as it has failed to delegate power to the PRIs and hence do not deliver as effective income generation mechanisms.

Solution

Empowering Village Forest Committees/Joint Forestry Management Committees (JFMCs) for management of forest resources through the Green India Mission (GIM) to be operationalised in 2012–13.

The GIM has been conceived as a multi-stakeholder, multi-sectoral and multi-departmental mission, recognizing that climate change phenomena will seriously affect and alter the distribution, type and quality of natural resources of the country and the associated livelihoods of the people. GIM puts the "greening" in the context of climate change adaptation and mitigation and is meant to enhance ecosystem services like carbon sequestration and storage (in forests and other ecosystems), hydrological services and biodiversity; along with provisioning services like fuel, fodder, small timber through agro and farm forestry, and NTFPs. One of the primary goals of GIM is to empower communities through capacity building. GIM seeks to achieve afforestation targets through creation of enhanced livelihood generation options. Provisions have been kept for the GIM for increasing forest and tree cover on 2.5 m. ha area (non-forest through agro / social / farm forestry), improving quality of forest cover on another 2.5 m ha area, improving ecosystems

services, and increasing forest based livelihood income and enhanced annual CO2 sequestration.

Impact

In terms of impact assessment, GIM will green 10 million ha over the next 10 years including 1.5 million ha of degraded lands, afforestation and eco-restoration of 0.9 million ha of ecologically sensitive areas. The expert group estimates that the Green India Mission would help neutralize an additional 1.5 per cent of India's GHG emissions annually, bringing the total GHG removal by India's forests to 6 per cent by 2020. On ground, the GIM will effectively establish the link between forest conservation and local livelihoods. It will also serve as a platform for participatory approach for afforestation and create positive community incentives to conserve forests. From a governance point of view, it will also energize the Panchayati Raj Institutions (PRIs) to take ownership of common resources.

3. Technology-based monitoring of forest cover and biodiversity

Reference: Chapter 7

Current Scenario

The Forest cover and biodiversity across states in India has not been recorded or technologically mapped yet. There is no comprehensive data base available to map areas as ecologically sensitive or fragile. This is the primary reason for delays in environmental clearances for power projects, mining projects and other infrastructure or development initiatives.

Solution

The Twelfth Plan proposes technology-based monitoring of forest cover, biodiversity and growing stock including change-monitoring on periodical basis through dedicated satellite by 2017.

Remote sensing-based forest cover monitoring in close collaboration with Forest Survey of India, National Remote Sensing Agency and Indian Institute of Remote Sensing has been proposed. This initiative will be taken for developing a countrywide mosaic of high resolution satellite images (LISSIV, Cartosat) and overlaying polygons/grids of areas to be taken up for interventions. In order to achieve higher level of accuracy in the monitoring and evaluation system, a dedicated forest satellite for monitoring forest cover, NTFP (Non Timber Forest Produce) resource, bio-diversity on periodical basis along with change monitoring has been proposed. The improved real-time, web-based monitoring system under this scheme would be extended to other schemes by strengthening the Forest Survey of India (FSI) and Remote Sensing / Geomatics Units in the states.

Impact

A proposed scheme on Satellite based Forest Resource Assessment will put in place a system for technology based collection of baseline data and evaluation of forestry schemes with GIS mapping of areas under the Forest Rights Act 2006. Using technology tools like GIS to map forest cover, protected areas and biodiversity hot-spots can go a long way in ensuring effective and speedy environmental clearances, tackling rehabilitation issues for wildlife and infrastructure reasons and facilitate the holistic goal to conserve the diverse ecological wealth of our country.

4. National Mission for Enhanced Energy Efficiency (NMEEE)

Reference: Chapter 14

Current Scenario

The total commercial energy consumed by industry including SMEs stands at about 40–50 per cent of the total commercial energy consumption in the country. Hence energy efficiency measures would yield substantial benefits in this sector. The introduction of 'super-efficient' lights and fans would enable lower rate of growth of electricity demand while enhancing services to households.

Solution

NMEEE is one of the eight Missions created by India's National Action Plan for Climate Change and is based on the Energy Conservation Act, 2001. The Mission will enable transactions in energy efficiency. Specific initiatives envisaged by the NMEEE include the Perform Achieve and Trade (PAT), a scheme based on market mechanisms to enhance energy efficiency. The scheme is expecting an energy saving of 3.5 million tons of oil equivalent (mtoe) in seven selective industrial sectors and 3.1 million tons of oil equivalents in thermal power stations by 2014–15. The scheme covers the following points:

- The first cycle of PAT is to achieve the set target of 6.6 mtoe by 2014–15. The second cycle envisages the inclusion of other energy-intensive sectors like refineries, Chemicals etc;
- Fiscal instruments like Partial Risk Guarantee Fund (PRGF) and Venture Capital Fund for Energy Efficiency (VCFEE) which have been proposed in NMEEE for successful implementation of PAT would enable financial institutions and equity investors to invest in energy efficiency products and companies.

Impact

Widely used electrical appliances such as fans and lights in homes and offices would have rapid and reduced energy consumption. From the industries side, the projected energy saving potential in the Twelfth Plan is 13.18 mtoe which consists of a saving of 6.2 mtoe from the seven energy-intensive industries (DCs), 1.75 mtoe from SME sector and 5.23 mtoe from thermal power stations sector.

5. Water Supply, Sewerage, Storm Water Drainage, Solid Waste Management and Environment Sustainability of the Cities

Reference: Chapter 18

Current Scenario

Lack of safe water and sanitation cause outbreaks of epidemics and Indian cities are every year affected by this. The impact of epidemics on the poor is much larger than on the non-poor for many reasons; firstly epidemics break out in areas where the poor live, their access to safe water and sanitation is far lower than non-poor and their nutritional status being poor they easily succumb to the epidemics than the non-poor. Thus, lack of safe water and sanitation cause health disorders and keep the mortality rates high in general and among the poor in particular.

Solution

Universal coverage of urban areas: This involves the universal coverage of all urban population for the minimum levels of safe drinking and household-use water along with a clean toilet, sewerage, storm water drainage and solid waste management. The provisioning of basic water and sanitation should be linked from issues of land tenure and legal status. These services should be provided on the clear understanding that this provision does not automatically translate into legal entitlements in other spheres, especially as regards legal rights to the land and/or dwelling space.

Identification and reduction of leakage and preventive maintenance: These measures would be promoted as an integral part of the operation and maintenance of the water supply system on a regular basis. This would help save precious quantities of treated water and increase revenues to make systems self-sustaining. 100 per cent metering of water is required for recovery of reasonable user charges and conservation.

Impact

Such measures can often delay the need to immediately increase capacities of the existing schemes, which are very often quite capital intensive, while triggering significant improvements in service delivery. Metering will help increase the total quantum of water available and consequently amplify the quantum of water available for supply. Metering will also lead to reduction of wasteful use of water thus increasing efficiency and sustainability of the water supply system.

6. Promoting convergent technology solutions for applications in rural India

Reference: Chapter 8

Current Scenario

India is witnessing tremendous economic growth. In recent years there has been a boost to science and technology in the country. For instance, our scientific output has reached to 3% of global output and the share of scientific publications emanating from universities increased from 15 per cent in 2003 to 31 per cent in 2012. But these are marginal improvements. The investment in R&D remains at 1 per cent of gross domestic product (GDP). Technology now has to deliver practical and accessible solutions to the numerous issues of the mass population. In pursuit of these objectives the twelfth plan has initiated Grand Challenge Programmes and launched PAN-India missions to address national priorities in various developmental sectors through the bottom-up approach, particularly in the areas of Health, Water, Energy and Food.

Solution

CSTRI: In order to promote convergent technology solutions for applications in rural India, a new Council for Science and Technology for Rural India (CSTRI) has been formed by Department of Science & technology under its social contract. Two facilitation centres one at North East Institute for Science and Technology and other at Indian Institute of Technology, Madras at Chennai have been established. Special schemes for vulnerable sections of the society will be taken through CSTRI. New programme viz. launching of model demonstration projects through CSTRI for rural application included under this objective have the number target as the success indicator.

CSIR 800: The programme on CSIR 800 that was launched during the Eleventh Five Year Plan for improving the quality of life and augmenting livelihood for the people at the base of the economic pyramid is being expanded during the Twelfth Five Year Plan. As a part of the programme, CSIR would address the needs of rural communities also through implementation of 24 identified CSIR Technology Enabled Villages (TECHVILS) across the country. The programme would be implemented in the following three stages: the REACH-TECH (to be transferred immediately), DEMO-TECH (to be transferred mid-way into the Plan) and INNOTECH (to be transferred by the end of the Plan period). Major R&D work under this programme relate to non-conventional energy, housing, potable water etc. Born out of the recent CSIR vision, the Mark I version of Soleckshaw has been designed, developed and prototyped by the CSIR's national laboratory, the Central Mechanical Engineering Research Institute (CMERI) at Durgapur, in a record time of eight months.

CSIR Special Centres for North-Eastern States, Lakshwadeep and Andaman and Nicobar Islands: CSIR during the Twelfth Plan would focus on special eco-regions of the country and facilitate their sustainable development through S&T intervention. The North-East region and the islands of Lakshadweep, Andaman and Nicobar have been chosen in this regard. CSIR's efforts would include promoting innovation and CSIR technologies for the north-

eastern States and undertake S&T intervention towards disaster mitigation and sustainable development of the coral reefs in the Lakshadweep, Andaman and Nicobar Islands.

Impact

These programmes can engineer solutions that are energy and cost effective and can be disseminated to the people on mass scale.

7. Increased focus on renewable sources of energy such as wind and solar energy

Reference: Chapter 4

Solution

National Wind Energy Mission – India's wind energy potential is estimated at about 103000 MW for 80 m hub height. Technological innovations, including increasing the height of the tower, could make wind a major renewable source of power generation and we could safely target a wind capacity addition of 30000 MW by 2020. Among other aims, the National Wind Energy Mission would incentivise the industry to invest in indigenous design and manufacture of turbines more suitable for Indian conditions.

Along similar lines, the Jawaharlal Nehru National Solar Mission (JNNSM) envisages grid parity for solar power by 2022 and seeks to set up solar power capacity of 20000 MW.

Impact

Higher dependence on alternative sources of energy will not only reduce dependence on fossil fuel imports but indigenous manufacturing for large capacities will also create additional jobs. By creating the foundation of a decentralized energy industry, such measures will also lead to improved governance.

8. Augmenting Solar Capacity

Reference: Chapter 8

Current Scenario

India is witnessing tremendous economic growth and the role of technology is paramount in sustaining the competitiveness of the nation. The country is also reeling under a power crisis. A practical and sustainable solution which harnesses renewable energy sources is the need of the hour.

Solution

Focus on Solar Energy: During the Twelfth Five Year Plan period, leveraging on its technology prowess, Central Electronics Ltd.(CEL) plans to develop capabilities for the manufacture of Dye Sensitized Solar Cells (DSSCs or Grätzel cells), which are emerging as

one of the highly creditable alternatives to silicon photovoltaic and to the more recently developed thin film technologies. CEL has proposed to develop the design of systems for a relatively new approach for optimising solar system efficiency and improving reliability with the design and manufacture of micro-inverters that connect to individual solar panels. Also, to enhance manufacturing capacity commensurate with active marketing efforts and business expansion, steps are being taken up by CEL to ensure that the present plan capacity of 10 MW for SPV products is increased to 80 MW. CEL has also proposed through a joint venture to set up a National Silicon Wafer production facility for producing silicon wafers of 1000 MW/year capacity to reduce the nations' reliance on availability of this critical resource of silicon materials through import from other countries.

Impact

Increased solar capacity is a practical and sustainable solution to the increasing power crises of the nation. It will lead to reduced water and coal consumption, provide cheap and clean source of energy especially to rural and remote areas.

9. Steps to limit environmental degradation through industrial activity

Reference: Chapter 13

Current Scenario

Land, water, and air are adversely affected due to the operation of manufacturing units. The Central Pollution Control Board has identified 17 highly polluting industries, most of which are manufacturing industries but current policies do not encourage the mainstreaming and scaling up of new technologies for widespread use, mainly due to a lack of financial support. Additionally, the huge waste management and recycling industry is largely unorganised making it difficult to enable coordination between government agencies and private organizations.

Solution

The Twelfth Plan has outlined a multi-pronged approach to limit environmental degradation through industrial activity:

- a. Policy enablers such as implementing polluters-pay principle, with specific pollution loads beyond a defined benchmark priced and paid for by industry, development of a National Waste Management and Recycling Programme - to mainstream the waste management & recycling industry; develop industry and sector specific recycling standards and build local institutional capacity;
- b. Supply side enablers such as creation of a Green Technology Fund to promote and enable adoption of new, more environment friendly technologies and provide funding for R&D
- c. Demand side enablers such as promoting public procurement of green products through price incentives on Government tenders.

Impact

Policy moves for sustainable industrial growth will ensure that green is not viewed as just an obligatory expectation for an individual business but an area of tangible concern. Synchronizing policy to address on-ground realities from the supply as well as the demand side will ensure our natural resources are nurtured and not harvested ad infinitum. Local communities will begin to trust industrial businesses more, and land acquisition will become less contentious.

10. National Irrigation Management Fund (NIMF)

Reference: Chapter 5

Current Scenario

Water is a scarce resource and India fares quite poorly on water use efficiency comparisons. As per a study conducted by the Central Water Commission (CWC) in 30 completed major and medium irrigation projects, the average efficiency is 38 per cent. This does not compare well with 45 per cent in Malaysia and Morocco and 50–60 per cent in Israel, Japan, China and Taiwan. The absence or ineffectiveness of Water Users Associations (WUAs) is one of the reasons mentioned as a significant contributor to the gap between Irrigation Potential Created (IPC) and the Irrigation Potential Utilised (IPU). Although a large number of WUAs are reported to have been formed in various States, only a few have actually been handed over the system. Successful functioning of WUAs is reported only in a few projects in Maharashtra, Gujarat, Andhra Pradesh and Orissa. The Twelfth Plan proposes major changes to strengthen these initiatives.

Solution

The Twelfth Five Year Plan proposes the setting up of a National Irrigation Management Fund (NIMF) to catalyse and undertake reforms in the water sector such as improving water use efficiency, participatory community based management of aquifers, regulation of groundwater, revamping irrigation/water resource departments and so on. The NIMF will also focus on Water Users Associations. Specifically, the fund will provide a bonus from each State's Irrigation Service Fee (ISF) allowable only if WUAs are allowed to keep 50 per cent of the ISF collected by them and their federations at the distributary level are allowed to keep 20 per cent of the ISF paid by irrigators.

Impact

This initiative will expand resources with WUAs, which are local bodies and their federations. They will thus be able to effectively undertake proper repair and maintenance of distribution

systems. Overall the NIMF will increase their stake in water management taking governance to the local level.

11. Improving Coal Utilization

Reference: Chapter 4

Current Scenario

In the business-as-usual scenario India would rely heavily on coal to meet its surging power demand. However, this poses an enormous environmental and natural resource challenge, as Power sector is the highest contributor (38 per cent) to India's GHG emissions.

Solution

The Twelfth Plan has outlined a number of focus areas to ensure sustainable development. Policies that seek to reduce dependence on fossil fuels include the usage of '**Advanced Coal Technologies**'. This proposes that 50 percent of the Twelfth Plan target and all coal-based capacity addition in the Thirteenth Plan would be through super-critical units, which reduce the use of coal per unit of electricity produced.

Impact

10 GW of Ultra Supercritical coal plants can reduce emissions by ~ 15 per cent compared to current plants. This policy would also reduce India's import dependence and lead to lower emission of toxic chemicals like SO_x, NO_x and other particulate matter.

12. New Exploration Licensing Policy (NELP)

Reference: Chapter 14

Current Scenario

The NELP was a major initiative to attract private investment into the oil and natural gas sector, with the NELP blocks being subjected to Government-prescribed allocation for uses and Government-approval pricing formula. However, questions have arisen regarding the interpretation of various clauses in the existing NELP contracts. Thus the existing NELP regime needs to be revised to ensure greater private investment including foreign investment in oil and natural gas blocks and increase new capacities for renewable energy. Since oil exploration is a global industry, the terms India offers must be comparable with those offered elsewhere. In this context, the entire structure of NELP contracts for oil and gas need to be reviewed.

Solution

There is a need to review the provision of pricing under Production Sharing Contracts (PSC) to clarify the extent to which producers will have the freedom to market the gas. Legally, gas as a resource belongs to the Government and the Government has the right to fix an appropriate price. However, if the intention is to attract private investment into this sector, the Government should state clearly what degree of pricing freedom will be given.

Eliminating the uncertainty that has arisen regarding gas pricing from NELP production sharing contracts by implementing a new design of contracts would facilitate private investments. Implementing the recommendation of the Rangarajan Committee may also be an important input in finalizing this policy. Appropriate steps should be taken to resolve conflicts in existing contracts where the interpretation of the contract term is open to multiple options.

Impact

Policy revision can play an important role in obtaining various clearances for the upstream operators from multiple agencies of the Government. This review of policy would also essentially help tap a large number of discoveries which have been made under NELP but are yet to be appraised and developed.

13. Promoting the use of renewable energy in Railways

Reference: Chapter 15

Current Scenario

Indian Railways are primarily powered by electricity, which is supplied at lower tariff rates. In a country, already deficient in power resources, it is essential to promote use of renewable energy for fueling a part of infrastructure projects such as railways.

Solution

In the given context, it has been proposed in the Twelfth Plan to develop renewable energy projects and have strategies for more clean energy in the consumption basket. The essential strategies include: Grid connected Solar Panels at major stations; Provision of roof top Solar Panels on passenger coaches running in Close Circuits; Provision of solar Panels, Solar Water heaters, Solar Pumps and so on. in Hospitals, Running Rooms, Rest Houses; and LED based lighting and Display Systems. Along with the above, wind energy shall also be developed in order to meet these requirements. In collaboration with IIT/Kanpur and DRDO, Indian Railways is undertaking field trials for biodegradable and environment friendly toilets that would be introduced in passenger coaches in a phased manner during the Twelfth Plan period.

Impact

In addition to the above, the DFC initiative by the Indian Railways is also expected to offer significant reduction of Green House Gas (GHG) emissions in the transport sector of India.

14. Integrated Action Plan (IAP) for select backward and tribal districts

Reference: Chapter 17

Current Scenario

Significant steps towards improving housing in rural India are taken through Indira Awaas Yojana (IAY) and assistance from State Governments and financial institutions/banks. During the Eleventh Plan, about 30 lakh houses were constructed under various rural housing schemes of State Governments. Financial assistance provided under IAY was raised twice during the Eleventh Plan, on 1 April 2008 from Rs. 25000 and Rs. 27500 (for hilly/difficult areas) to Rs. 35000 and Rs. 37500 respectively and to Rs. 45000 and Rs. 48500 on 1 April 2010. The higher assistance is also provided to districts under the Integrated Action Plan (IAP) for select backward and tribal districts. Progress on some of these innovative features that drive towards convergence with other rural infrastructure schemes like Smokeless Chullahs, Bio-Gas Plant, Kitchen Garden, Life Insurance Scheme, Health Insurance Scheme has been slow.

Solution

Along with concerted efforts to demystify and enable access to technical knowledge and skills for good quality construction, disaster risk in various locations will be considered and analyzed. Technical guidelines for house construction would need to be modified suitably. Under the GoI– UNDP Disaster Risk Management Programme, the Ministry of Home Affairs has developed 'Guidelines for Development and Building Construction including Safety Provisions for Natural Hazards in Rural Areas'.

Impact

This will drive attention to 'multi-hazard'–prone areas spelt out in the Vulnerability Atlas of India through incorporation of disaster resistant designs in house construction.

Appendix

EXTRACT OF PM'S STATEMENT AT THE FULL PLANNING COMMISSION MEETING

September 15th, 2012

<http://goo.gl/emQBo>

"The central message of the Plan is that we can achieve our objective provided we put in place policies that will take care of our weaknesses. The Plan for the first time introduces alternative scenarios.

Scenario one is called "Strong Inclusive growth". It presents what is possible if the policy actions outlined in the Plan are substantially implemented. One can expect a number of virtuous cycles to start operating, leading to positive results on both growth and inclusion. This is the scenario we should aim at.

Scenario two is called "insufficient action". It describes a state of partial action with weak implementation. The virtuous cycles that reinforce growth in Scenario I, will not kick in, and growth can easily slow down to 6 to 6.5 percent. Inclusiveness will also suffer. This is where we will end up if we make only half-hearted efforts and slip in implementation. It is my sincere hope that we do not do so.

Scenario three is called "policy logjam". It reflects a situation where for one reason or another, most of the policies needed to achieve Scenario 1 are not taken. If this continues for any length of time, vicious cycles begin to set in and growth could easily collapse to about 5 percent per annum, with very poor outcomes on inclusion. I urge everyone interested in the country's future to understand fully the implications of this scenario. They will quickly come to an agreement that the people of India deserve better than this.

I believe we can make Scenario one possible. It will take courage and some risks but it should be our endeavour to ensure that it materialises. The country deserves no less."