Tourism

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Government Initiatives

NEW CAMPAIGN TO PROMOTE HIMALAYAS

- Union Minister of Tourism announced the launch of a new campaign to publicise the tourism potential of the Himalayas and promote this incredible tourist product internationally.
- To be called "777 days of the Indian Himalayas", the campaign will have a twofold objective, one to attract more international tourists to India during the lean summer season and second, to remind the world that 73 percent of the Himalayan region is in India.
- The aim of this campaign is to promote not only the Himalayan States but also the gateway cities which will serve them with their international and domestic airports and railway stations.

Statistics

1. The number of foreign tourist arrivals in 2011-12 is around 6.3 mm (up from 5.8 mm in 2010-11 and 5.2 mm in 2009-10), an increase of ~9%. The target is 11 mm by 2017.
2. It contributes 6% to GDP and 9% to employment.

Potential /Opportunities

1. Employment: In India, the travel and tourism sector is estimated to create 78 jobs per million rupees of investment compared to 45 jobs per million rupees in the manufacturing sector. Along with construction, it is one of the largest sectors of the service industry in India. It is capable of providing employment to a wide spectrum of job seekers from the unskilled to the specialized, even in the remote parts of the country. Finally, compared to other modern sectors, a higher proportion of tourism benefits (jobs, petty trade opportunities) accrue to women. Internationally, women account for 70.0 per cent of the workforce in the travel and tourism industry.

Strategy

1. Government would need to adopt a 'pro-poor tourism' approach aimed at increasing the net benefits that flow to the poor from tourism. Such benefits may be economic, social, environmental or cultural. These go well beyond simply promoting community tourism, heritage tourism, eco-tourism, wellness tourism and the like. It includes expansion of local employment through commitment to creation of local jobs and training of locals for employment; expansion of business opportunities for small and micro businesses
2. The implementation of these strategies will involve developing formal and informal links between all stakeholders and coordination across all levels of Government. It would be necessary to establish a 'whole government' agenda for tourism development between departments at national level and between national and local government so as to create convergence and synergy across programs. The National Tourism Policy should form an integral part of the poverty reduction strategy during the Twelfth Five Year Plan.

National Tourism Policy (Draft), 2011
Features

1. By 2017, to host 1% of global tourists (current 0.6%). This would require additional 400k hotel rooms and would create 25 mm jobs.
2. To target 12 per cent annual growth in this sector in the Twelfth Five Year Plan.

Cruise Shipping Policy, 2008
Potential of Cruise Shipping

1. Cruise Shipping refers to leisurely passenger shipping. It beneficial not only in tourism terms but also in promoting the handicrafts industry.

Features

1. It provides for better fiscal regime, better port and connectivity facilities and liberal immigration regime.
2. A Steering Committee formed in 2010 envisaged developing 5 ports of Goa, Mumbai, Cochin, Chennai and Mangalore and including inland river cruising as LTC for government employees.

Tourism Initiatives for North East

1. Incentives are given to Central Government Employees to travel to NE.
2. 10% of Planned Tourism Expenditure reserved for NE.
3. NE fairs and exhibitions will get 100% central finance assistance.

Poverty, Unemployment, Inequality

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Poverty Measurement

Reasons for Recent Poverty Drop

Himanshu (2012) has questioned the comparability of the 2004-05 and 2009-10 consumer expenditure surveys on the grounds that 2009-10 consumption schedules included expenditure of the government on the Mid-Day Meal Scheme (MDMS) as a part of household expenditure – this item of expenditure was not included in the previous quinquennial surveys.

TN PDS grain issue: free valued at market (2012) while nominal valued at PDS prices.

1. The growth acceleration certainly was a major factor.
2. There was a terms of trade shift in favor of agriculture, which began in 2004 and continued to gain strength thereafter. Over the period, my rough estimate is that the terms of trade improvement added somewhere between 3 to 4 percentage points annually to real agricultural income growth.
3. NREGA:
    1. How can the MGNREGS wage become a reservation wage when MGNREGS schemes are mostly offered in the slack season?
    2. And also, we know that the demand from workers in many states is simply non-existent.
    3. There is a difference between work being offered and work taking place. It is correct that most MGNREGS work actually takes place during the slack season, but that is an ex-post outcome rather than a design feature of the scheme. By the Act, workers can demand work at any time they want, and if 15 or more persons collectively demand MGNREGS work, then it has to be provided. Thus, there is no reason why MGNREGS cannot be used as an effective bargaining chip.
4. Effect of Rural Growth on MSMEs
    1. How is this spectacular growth rate in the MSME output related to the terms of trade change in favour of agriculture?
    2. The simple fact is that most of corporate India has not considered rural areas as a part of their key markets, except with a few exceptions like the fast moving consumer goods and cement sectors. As a consequence, the upsurge in rural consumption demand triggered off by the terms of trade change was met primarily by the MSMEs, which were in any case focused on these markets.

Flaws in Methodology

1. Take the curious fact that poverty in Bihar declined from 53.5% of the population in 2009-10 to 33.74% in 2011-12. This is a drop of 19.76 percentage points. But Bihar's poverty rate declined only marginally from 54.4% in 2004-05 to 53.5% in 2009-10, when the state had the same government in power.
2. In Mumbai and Delhi the number of poor is only 6 and 10 per cent of the total city population respectively, whereas the slum population alone in these districts is 53 and 30 per cent respectively. Therefore, the estimates for the number of poor should be reworked by taking into account their deprivations and living conditions, such as access to basic services, shelter, public health, and education.

Q. Discuss Amartya Sen's poverty measure and recent advances in poverty measurement. (2011, II, 15)
World Bank Poverty Measurement Approach

1. WB uses the consumption data to calculate the poverty head count. Where consumption data from the national household surveys is not available but income data is available, it scales down the income in ratio of the proportion of consumption in the NAS data.
2. To compare the consumption level across countries, it needs estimates of price levels. To this end, it uses the PPP estimates based on 1993 $ values. Then it uses a line of $1.08 per day in 1993 $ PPP terms.

Defining Poverty Line
Is Poverty a Value Judgement?

1. Does poverty, like beauty, lie in the eye of the beholder? And hence any exercise to measure poverty would be a purely subjective one.
2. Its not because even though what constitutes deprivation may vary from person to person and time to time but at the social level there would certain minimum acceptable living norms.

Is Poverty Determined by Public Policy?

1. It can confuse between what ought to be removed and what can be removed immediately. But even if something can't be removed with current resources doesn't mean its not poverty.
2. Seldom voting happens purely on this issue. Representatives are elected on a plethora of issues.

Relative Deprivation or Absolute Deprivation?

1. It is both. It can't be purely relative because say in a depression or a famine if everybody is relative positions haven't changed it doesn't mean poverty has not increased. Thus relative deprivation approach supplements the absolute deprivation.

Direct Method or Income Method?

1. They are not 2 different methods to measure the same thing but are two different concepts of poverty altogether.

Basic Capabilities Approach (Sen and Dreze)

1. We need to identify poor on the basis of handicaps to performing certain basic functions. These capability disadvantages can be in form of unsanitary conditions, poor health, malnutrition. It also includes structural deprivations. For example, women bear a disproportionate burden of poverty.

Basic Goods Approach

1. We should see the access to a basket of basic goods which includes health, water etc.

Income Approach

1. Income necessary to buy a minimum basket of goods say 2400 kcal.

Hunger Criteria

1. NSS 1983, conducted an experiment by including a question addressed to the head of the household - whether all members of the household got two square meals a day throughout the year or not. The responses were divided in 3 categories. (i) Number of persons who were getting two square meals a day, all the year round; (ii) Number of persons who were not getting two square meals a day for some months of the year; and (iii) Number of persons who were not getting two square meals a day even for some months of the year. Seasonally hungry, i.e. category (ii) above , and chronically hungry, i.e., category (iii) above were added together to get a distribution of persons who go without food at least on some occasions in the course of the year. The ratio of such persons to total population is termed as "the hunger ratio".
2. It was found that the incidence of hunger was less than the incidence of poverty, both in rural and in urban areas of the country. It was higher in the rural areas (19%) than in the urban areas (7%). Finally, hunger showed even more regional concentration than poverty. For example, the proportion of chronic hunger varied from 40% in Bengal, 37% in Bihar rural to 0.85% in Haryana rural and 1.6% in Punjab rural in 1983.
3. Moreover it is not free from subjectivity. For instance the size of square meal would differ not only from person to person but also from place to place. Very often, particularly in rural India, the head of the family, usually a man who is the main respondent in the survey, would not be sufficiently aware of the quantity and content of meal left for his wife and other female members of the house.

Food Share Criteria (Engel)

1. The proportion of income spent on food decreases as income increases. Using a certain fixed proportion of expenditure on food as a dividing line, the individuals/households could be grouped as poor or non-poor. We can take the proportion implied by 1973-74 poverty lines as the cutoff (82.5% in rural and 78% in urban). This gives lower poverty ratios. This criterion would also overcome certain constraints and problems associated with the estimation of poverty, such as, the assumption of uniform calorie norms for the entire country, the price adjustment of the poverty line, capturing the inter-State price differentials and the problem of adjustment of NSS-based consumption expenditure with the estimate of private consumption expenditure in National Accounts Statistics, etc.
2. But it is difficult to arrive at a consensus as to what should be the desirable proportion of expenditure devoted to food so as to determine the poverty cut-off points. Here we have implicitly used the calorie intake criterion of 2400 and 2100 calories for rural and urban areas respectively with reference to the consumption basket in 1973-74 at 1973-74 prices, uniformly for the entire country. Though the expenditure criterion takes care of the problems associated with the updating of poverty line (i.e., the problem of appropriate deflators) it is unable to incorporate the inter- State price differentials. Moreover the expenditure criterion fails in separating the influence of socio-cultural factors on eating habits of the people which is an important factor in determining the proportion of expenditure devoted to food.

Calorie Consumption Criteria

1. This means taking the norm of 2400 kcal for rural and 2100 kcal for urban areas in each state individually.
2. While using a common calorie norm and relying exclusively on the NSS household consumption survey data, this method in effect allows the poverty line to fully reflect inter-State differences in (a) consumer preferences in respect of food as well as of the level and pattern of non food consumption, and (b) level in structure of prices at each point in time. It also allows fully differential changes in the level and composition of consumption due to changes in income and prices as well as the differential price trends across States.
3. The difficulty with this measure is that it gave very high poverty ratios like 79% in Kerala, 78% in TN, 75% in Maharashtra in 1983 and also showed an increase in poverty from 54% in 1977-78 to 67% in 1983. So PC argued that it was difficult to make a meaningful comparison of poverty incidence across States at any given point of time because of inter-State variation in the composition and quality of the consumption basket associated with the given calorie norm.

Criticisms of poverty line approach

1. Even though based on calorie approach, the poverty line is not a true indicator of malnourishment because of interpersonal variations in good habits.
2. The notion of absolute poverty is inadequate because relative poverty is also an equally important.
3. The poverty line, quantified as a number is reductionist. It does not capture important aspects of poverty — ill health, low educational attainments, geographical isolation, ineffective access to law, powerlessness in civil society, caste and/or gender based disadvantages, etc.
4. The poverty line provides the conceptual rationalization for looking at the poor as a "category" to be taken care of through targeted ameliorative programmes, ignoring structural inequalities and other factors which generate, sustain, and reproduce poverty.
5. Poverty line derived from personal consumption patterns and levels do not take into account items of social consumption such as basic education and health, drinking water supply, sanitation, environmental standards, etc. in terms of normative requirements or effective access.
6. The head-count ratio based on the poverty line does not capture the severity of poverty in terms of the poverty deficit (total shortfall from the poverty line) or additionally the distribution of consumption expenditure among the poor. It is insensitive to mobility within the below poverty line group. It is also invariant to upward and downward mobility across the poverty line so long as such mobility takes place in equal measure.
7. In a country of India's continental size and diversity, poverty line based on aggregation at all-India level ignores State-specific variations in consumption patterns and/or prices.

Aggregation - How to create an index?
Sen's Axioms
According to Sen, any poverty index must satisfy the following criteria

1. Focus axiom: The poverty index should be independent of the non poor population.
2. Weak monotonicity axiom: A reduction in a poor man's income holding others constant must increase the poverty index.
3. Impartiality axiom: The index should be same for any given ordered set of income and should not depend on who is earning what.
4. Weak transfer axiom: The index should increase if income is transfered from a poorer person to a less poor (but still below poverty line) and still the set of poor people doesn't change.
5. Strong upward transfer axiom: The index should increase if income is transfered from a poorer person to a less poor.
6. Continuity axiom: The index must vary continuously with incomes.
7. Replication invariance axiom: The index should not change if it is computed based on an income distribution that is generated by the k fold replication of original income distribution.

Drawbacks of Head Count Ratio (H = p/n) Index

1. It doesn't satisfy weak monotonicity axiom, weak transfer axiom and strong transfer axiom. It can sanction a policy which takes income from the poorest of poor and gives it to poor near the poverty line to push them up.

Drawbacks of the Poverty Gap Index

1. Poverty gap index is $G_p = (1/p) * \sum(z-y_i)/z$ where z is the poverty line and p is the number of poor and y_i is the income of the ith poor.
2. But it doesn't satisfy weak monotonicity axiom.

Sen's Index

1. $S_p = H * (G_p + (1-G_p) * Gini_{poor})$ where S_p is Sen's poverty index, G_p is the poverty gap index, H is the head count index and $Gini_{poor}$ is the Gini coefficient of the income distribution among the poor. This works when the number of poor is large.
2. It satisfies all the axioms.

Shorrocks - Sen - Thon (SST) Index

1. $SST_p = (1/n^2) * \sum(2n - 2i + 1) . x_i$ where $x_i = (z - y_i) / z$ and is 0 for noon poor and n is the total population. Later on it was shown that it can be viewed as a product of H, G_p, and one plus the Gini index of the poverty gap ratios of the population.

Poverty Alleviation Strategies
Growth Led Strategy / Trickle Down Theory

1. It was popular in 1950s and 60s where high growth rate alone was considered to be sufficient to reduce mass poverty. It was recognized that market failures may happen but the impact of such failures was considered to be small.

Chenery and WB - Redistribution with Growth

1. By 1970s trickle down theory was anything but finished. Most economies grew at fast rates yet there was no visible impact on poverty. Thus it was considered necessary to attack poverty directly by devising special programmes focused on socio economic groups identified to be poor. They recognized that poor have not gained as they lacked productive assets and opportunities for gainful employment - thus these programmes focussed on both. This strategy includes (a) focusing on expanding economic opportunities for poor through enhancing economic growth and increasing their asset base and the return on these assets. Poverty can't be eliminated in a stagnant economy. (b) facilitating empowerment which means strengthening the participation of poor in decision making, eliminating their disabilities and making state more sensitive to them. (c) enhancing security by reducing their vulnerability to various forms of insecurity that affect their live like economic shocks, natural disasters, crop failure, ill health etc.
2. Thus WB advocates more foreign aid, promoting global economic stability and reducing the risk of economic crisis, opening up developed countries' markets for the poor countries, encouraging the production of international public goods that benefit poor people like agricultural and medical research etc. and giving greater voice to the developing countries in international forums.

Washington Consensus

1. The impact of Chenery and WB approach was mixed. Large scale poverty persisted and now the wisdom of desirability of large public expenditure programmes was questioned. Instead it was emphasized to promote market forces and trickle down was reborn.

Growth and Poverty

1. Circular causation: If we define poverty as lack of income then there is a circular element here and a rise in income is bound to have a reducing impact on extent of poverty. Growth is not the only or even principle means of poverty reduction. This is because poverty need not take the form of only low incomes. It can be reflected in various other disabilities. In particular role of education and health is important and hence the need to expand these basic services.
2. Post reforms vs pre reforms - overall rate: Rural poverty was 50% in 1993-94, 42% in 2004-05 to 34% in 2009-10. (All India poverty has declined from 45% in 1993-94 to 37% in 2004-05 to 30% in 2009-10. Urban poverty has declined from 32% in 1993-94 to 25.7% in 2004-05 to 21% in 2009-10.) Similarly the rural personal consumption expenditure has recorded a growth of 1.5% p.a. (1.3% from 1994-2005 and 1.7% from 2005-10). Thus the pace of poverty reduction has increased from 0.8% p.a. in 1993-94 to 2004-05 period to 1.2% in the 5 years since. Estimated growth elasticity of poverty in India is ~0.8 and it has fallen post reforms.
3. International experience: per capita income growth vs poverty reduction: A study done over Asian countries and covering 1970s, 80s and 90s showed that where the growth rates were high (> 3.5% p.a. per capita income) there was a strong positive correlation between high growth and poverty reduction. In low growth situations the correlation was very weak. In Indian case in the low growth decade of 1970s the elasticity was 2.15, in somewhat higher growth rate decade of 1980s the elasticity was 0.6, in still higher growth rate decade of 1990s it was 0.77 while between 1994-95 to 2004-05 it dropped to 0.13. The 1994-95 to 2004-05 period was also accompanied by a drop in employment growth.
4. Growth pattern and poverty: International experience shows that growth in agriculture leads to faster decline in poverty.

Employment and Poverty

1. International experience: employment growth vs poverty reduction: Employment was found to have a higher correlation with poverty reduction than growth in per capita income. It was found that for countries with same per capita income growth but different employment growth, poverty reduction was higher in case of higher employment growth. If we look at poverty reduction rate and employment growth in India, the relationship holds. Thus (based on PC official approach then and not Lakdawala) between 1973-74 to 1983 employment grew @ 2.43% p.a. and poverty reduced @ 1.4% p.a. Between 1983 and 1993-94 employment grew @ 2% p.a. and poverty reduced by 0.8% p.a. Between 1993-94 and 2004-05 employment grew @ 1.8% and poverty reduced @ 0.75%. But when we mix per income growth with employment growth relationships break down.
2. Poor are not always unemployed: Most poor are not unemployed. While poverty ratio was 26% in 1999-00, poor among the employed were 29% and poor among unemployed were only 19%. Reduction in poverty was faster in case of unemployed than in case of employed. This is because of faults in definition of employment in India. Moreover educated unemployed are generally not poor.

Phase 1 (1947-91)

(b) BIMARU + Odisha + W Bengal + Jharkhand + Chattisgarh

1. Lakdawala 1973-74: Total: 59%, Rural: 61%, Urban: 51%.
2. Lakdawala 1983-84: Total: 52%, Rural: 54%, Urban: 46%.
3. Lakdawala 1993-94: Total: 42%, Rural: 44%, Urban: 34%.
4. Tendulkar 1993-94: Total: 50%, Rural: 52%, Urban: 35%.
5. Tendulkar 2004-05: Total: 44%, Rural: 47%, Urban: 32%.
6. Tendulkar 2009-10: Total: 38%, Rural: 41%, Urban: 27%.

(c) Rich + Moderately Rich States

1. Lakdawala 1973-74: Total: 53%, Rural: 54%, Urban: 50%.
2. Lakdawala 1983-84: Total: 40%, Rural: 39%, Urban: 43%.
3. Lakdawala 1993-94: Total: 30%, Rural: 28%, Urban: 36%.
4. Tendulkar 1993-94: Total: 44%, Rural: 50%, Urban: 32%.
5. Tendulkar 2004-05: Total: 32%, Rural: 38%, Urban: 23%.
6. Tendulkar 2009-10: Total: 21%, Rural: 24%, Urban: 17%.

(d) Fallen Angels

1. Lakdawala 1973-74: Total: 31%, Rural: 31%, Urban: 32%.
2. Lakdawala 1983-84: Total: 18%, Rural: 17%, Urban: 24%.
3. Lakdawala 1993-94: Total: 18%, Rural: 20%, Urban: 13%.
4. Tendulkar 1993-94: Total: 28%, Rural: 30%, Urban: 26%.
5. Tendulkar 2004-05: Total: 22%, Rural: 23%, Urban: 20%.
6. Tendulkar 2009-10: Total: 18%, Rural: 16%, Urban: 20%.

(e) All India

1. Lakdawala 1973-74: Total: 55%, Rural: 56%, Urban: 49%.
2. Lakdawala 1983-84: Total: 45%, Rural: 46%, Urban: 42%.
3. Lakdawala 1993-94: Total: 36%, Rural: 37%, Urban: 32%.
4. Tendulkar 1993-94: Total: 45%, Rural: 50%, Urban: 32%.
5. Tendulkar 2004-05: Total: 37%, Rural: 42%, Urban: 26%.
6. Tendulkar 2009-10: Total: 30%, Rural: 34%, Urban: 21%.

New 2011-12 data
Overall Figures

1. Poverty declined from 37.2% in 2004-05 to 21.9% in 2011-12 i.e. a 15% drop.
2. Pace of poverty reduction has been 2.2% a year, about three times the rate of poverty reduction over 1993-94 to 2004-05. During the 11-year period 1993-94 to 2004-05, the average decline in the poverty ratio was 0.74 percentage points per year.

MPCE

1. The real MPCE increased by much more in the second period (2004-05 to 2011-12) as compared to the first (1993-94 to 2004-05). 3.4% in rural areas and 3.7% in urban areas
2. The increase was fairly well distributed across all deciles of the population.
3. The distribution was particularly equitable in rural areas.

HEALTHY SIGNS (Poverty rate in %)

2004-05 2011-12

	Rural	% decline	Urban	% decline	Total	% decline
Bihar	55.70 / 34.10	-21.60	43.70 / 31.20	-12.50	54.40 / 33.70	-20.70
MP	53.60 / 35.70	-17.90	35.10 / 21.00	-14.10	48.60 / 31.60	-17.00
Odisha	60.80 / 35.70	-25.10	37.60 / 17.30	-20.30	57.20 / 32.60	-24.60
Rajasthan	35.80 / 16.05	-19.75	29.70 / 10.70	-19.00	34.40 / 14.70	-19.70
UP	42.70 / 30.40	-12.30	34.10 / 26.10	-8.00	41.00 / 29.40	-11.60
All India	42.00 / 25.70	-16.30	25.50 / 13.70	-11.80	37.20 / 21.90	-15.30

Source: Planning Commission

Percentage and Number of Poor Estimated by Tendulkar method, using Mixed Reference Period (MRP)

	Poverty Ratio (%)			Number of Poor (million)		
	Rural	*Urban*	*Total*	*Rural*	*Urban*	*Total*
1. 1993-94	50.1	31.8	45.3	328.6	74.5	403.7
2. 2004-05	41.8	25.7	37.2	326.3	80.8	407.1
3. 2011-12	25.7	13.7	21.9	216.5	52.8	269.3
Annual Average Decline: 1993-94 to 2004-05 (percentage points per annum)	0.75	0.55	0.74			
Annual Average Decline: 2004-05 to 2011-12 (percentage points per annum)	2.32	1.69	2.18			

The most notable such case
is Bihar, so far considered worst on PDS performance. But the
NSS 68th round reports that 43% of Bihar households accessed
PDS cereals in 2011-12, up from only 14% in 2009-10 and less than
2% in 2004-05. This expansion, unnoticed so far, is remarkable
because it went hand in hand with two other features: Bihar
climbed to the top of the poverty reduction league in 2011-12 from
being a laggard so far. Much more signifi cantly, Bihar's PDS grain
leakages (i e, what NSS does not capture as PDS consumption out
of offi cial offtake fi gures) reduced to about 20% in 2011-12 from
65% in 2009-10 and 97% in 2004-05.

Overall, the national percentage of households accessing
PDS cereals, that had declined from 27% in 1993-94 to 24% in 2004-05, increased to 39% in 2009-10 and further to 45% in
2011-12. Simultaneously, grain leakages which had jumped
from 28% in 1993-94 to 55% in 2004-05 reduced to 40% in
2009-10 and further to 35% in 2011-12.

The correlation across
states between access and leakage was -0.82 in 2009-10 and
-0.85 in 2011-12. Moreover, as Charts 1 and 2 show with data
for major states, leakages reduced around 1% for each 1%
increase in access. [3] This should help calm critics' fears that
leakages will increase with wider access.

Although MDM transfers rose to 1.0% of MPCE in 2011-12, this
increase was relatively modest. On the other hand, PDS transfers,
which had declined from 1% of MPCE in 1993-94 to 0.9%
in 2004-05, more than doubled to 2.2% in 2011-12. Much of this
was due to the PDS revival which nearly doubled PDS access after
2004-05 as noted in Table 1, but higher unit transfers also contributed.
In fact, the latter were dominant during the drought of
2009-10 when high food infl ation caused PDS transfers to reach
2.4% of MPCE for the population as a whole and 5.2% of MPCE
for the bottom 40%. While these may not seem large amounts,
they turn out to have had signifi cant effects on poverty

offi cial poverty reduction of 7.3 percentage points in the
period from 2004-05 to 2009-10, when per capita GDP growth
was also high.[8] Two observations were made in this context.
First, that poverty reduction may have been exaggerated since
NSS had imputed MDM expenditures in 2009-10 unlike in any
previous thick round. Second, that offi cial poverty reduction
using the Tendulkar method was much larger than by the
earlier Lakdawala method, suggesting a possibly important
role of food prices which the two methods treat differently. This
implies poverty reduction of only 3.5 percentage points
between 2004-05 (without MDM) and 2009-10 (with MDM),
which is less than half the corresponding offi cial poverty reduction
of 7.3 percentage points using the Tendulkar method. The Lakdawala and Tendulkar methods have two sources of
difference: (i) use of URP distribution in the former against
mixed recall period (MRP) distribution in the latter and (ii) use
of different poverty lines. Of these, (i) is not a cause of the
lower poverty reduction with the Lakdawala method. Growth
of nominal consumer expenditure during 2004-10 was slightly
higher by URP rather than by MRP and distributional changes in
URP also favoured more poverty reduction than in MRP. On the
other hand, Lakdawala poverty lines exhibit much higher
implicit infl ation during 2004-10 (59.7% rural and 57.5% urban)
than implicit in Tendulkar poverty lines (50.6% rural and 48.5%
urban). The reason for this is that food infl ation during 2004-10
(61.4% in the Consumer Price Index for Agricultural Labourers
(CPIAL) and 63.9% in Consumer Price Index for Industrial
Workers (CPIIW)) was much higher than general infl ation (54.9%
CPIAL and 48.3% CPIIW) and because the Lakdawala method
reweights price indices to conform to 1973-74 consumption
shares. Weights assigned to food in Lakdawala (81% for rural
and 75% for urban) greatly exceed present food shares near the
poverty line (59% rural and 53% urban in 2009-10).

In particular, Tendulkar poverty lines not

only capture the different prices for PDS from non-PDS purchases of rice, wheat, sugar and kerosene and weight these by share of PDS purchase in total purchase; changes over time in PDS shares are also refl ected. Unlike CPIAL and CPIIW that cover PDS at base year weights, Tendulkar poverty lines incorporate the large increases in PDS shares of these commodities that occurred from 2004-05 to 2009-10. [14] Consequently, the Tendulkar method measures much lower food infl ation and also shows higher poverty reduction than if available Laspeyres price indices had been used to update poverty lines.

However, although the Tendulkar method tracks prices correctly, its treatment of PDS prices can be improved. Unlike market prices, at which all consumers can buy an extra unit of an item, PDS prices vary with entitlement, apply to limited quantities and most benefi ciaries buy extra amounts of PDS items at market prices. As discussed earlier, a better approach from the welfare view is to calculate poverty lines that value PDS items at market prices and treat as household-specifi c transfers the difference between market cost of PDS purchases and actual out-of-pocket expenditure on these. This procedure is also suited to decompose the poverty impact of PDS food transfers.

the measured poverty headcount in 2009-10 would have been 31.3%, against the offi cial estimate of 29.8%, if MDM imputations had not been included. [10] The 1.5 percentage point difference is small but not insignifi cant as it adds up to 18 million people. There is some merit in the offi cial decision to include in-kind transfers such as MDM in household consumption because benefi ciaries receiving these do consume more even though they themselves incur no out-of-pocket expenditure. But comparability over time requires that imputed MDM expenditures should be included to calculate poverty in earlier years. But expansion of the MDM after 2001 [17] caused this impact to rise to 1.3 percentage points (1.6 rural and 0.6 urban) in 2004-05 and the 2009-10 impact was only marginally higher at 1.4 percentage points (1.8 rural and 0.6 urban). As Table 4 shows, PDS contribution to overall 1993-2005 poverty reduction was less than 2%, so that the 1997 adoption of TPDS, which shifted PDS focus towards targeted poverty reduction, largely failed. But subsequent developments more than doubled the PDS impact in 2009-10: to 3.2 percentage points on HCR. Consequently, PDS contribution to overall 2004-10 poverty reduction (30% to HCR, 40% to PG and as much as 52% to SPG decline) was very large, revealing the value of PDS for the poor when food infl ation is high

In 1993-94 there were 413 million people who were poor on the basis of out-of-pocket consumer expenditures. Of these, 11.5 million were lifted above the poverty line by in-kind food transfers, overwhelmingly by the PDS (10 million). In 2004-05, the number of people who would be poor without food transfers had risen to 417 million, of whom 28 million were lifted above poverty by in-kind food transfers, with PDS and MDM contributing equally. In 2009-10, despite a severe drought, the number of people who were poor without food transfers fell to 402 million and 55 million of these were lifted out of poverty because of food transfers, 38 million by the PDS alone. The bottom line is that population growth continued to erode the rather limited poverty reducing impact of GDP growth during 1993-2010 and that PDS and MDM, each on its own, lifted more people out of poverty in 2009-10 than income growth during the entire period. These stark results on the number of poor highlight an important observation from Table 4: that although income growth (i e, increase in out-of-pocket spending) is clearly the main driver of poverty reduction, this contributed rather little to the large acceleration in the pace of overall poverty reduction between 1993-2005 and 2004-10. The acceleration in the pace of HCR reduction that can be attributed to income growth was only from 0.73 to 0.87 percentage points per annum. But this should also not entirely surprise us because 2009-10 was a severe drought year with very large intra-year food infl ation. Estimates based on Laspeyres indices had initially suggested that poverty levels could rise above the past trend and hence the unusual decision taken to repeat the thick sample NSS consumer survey in 2011-12. However, because the Tendulkar method is sensitive to PDS, this revealed much larger poverty reduction than expected. The decomposition above reassigns this as the PDS effect and uses poverty lines that imply higher infl ation than the original Tendulkar lines, thus measuring lower growth of real out-of-pocket expenditures. That, nonetheless, 2004-10 HCR reduction due to out-of-pocket expenditures turns out better than the 1993-2005 trend, is important in view of the fact that it is now known that the 2011-12 survey shows a much larger reduction in poverty than was evident in the already signifi cant acceleration between 1993-94 to 2004-05 and 2004-05 to 2009-10.

Provisional results of the decomposition using this suggest that: (a) The HCR using MPCEMRP, which was 38.2% in 2004-05 and 33.9% in 2009-10, declined to 26.8% in 2011-12. This implies that the out-of-pocket income component of poverty reduction

accelerated from 0.73 percentage points per annum during 1993-2005 to 1.63 percentage points per annum during 2004-12. The 2009-10 HCR by this measure was 12.5% above trend.
(b) The impact of in-kind food transfers on HCR reduction, which was 2.6 percentage points in 2004-05 and 4.6 percentage points in 2009-10, increased further to 4.8 percentage points in 2011-12. This implies that in-kind food transfers, which had lifted 28 million people above the poverty line in 2004-05 and 55 million people in 2009-10, lifted 59 million people above the poverty line in 2011-12.

We fi nd that the poverty reducing impact of these food transfers has increased over time. Only 1.3% of population was lifted above poverty line as a result of such transfers in 1993-94, but this increased to 2.6% in 2004-05 and to 4.6% in 2009-10.

1. Backward States
    1. Good Performers: Odisha (25% i.e. from 57% to 32%) > Bihar (21% i.e. from 55% to 34%) > Rajasthan (20% i.e. from 35% to 15%). These states performed exceptionally well in reducing rural poverty.
    2. Poor Performers: Jharkhand (8.34%) < Chhattisgarh (9.47%) < UP (11.6% with 30% BPL). National average was 15.3%. MP has 32% BPL down from 49%.
2. Chattisgarh
    1. It registered good economic growth and had decent entitlement programme in place, yet the state did not do well in its fight against poverty. The state registered an above average GSDP growth rate of 8.69%, a robust 7.27% growth in agriculture and allied sector from 2005-06 to 2011-12, and has a much talked about public distribution system in place. Yet the state still has nearly 40% people below the poverty line, almost double the national average.
    2. Chhattisgarh may have suffered because of naxalism.
    3. Economists are also of the view that in the case of Chhattisgarh, growth numbers tend to be misleading as there are very few growth centres and nothing much has changed in most other areas.
3. Bihar and Odisha
    1. Growth: Bihar recorded the highest average growth of 11.42% between 2004-05 to 2011-12 and recorded one of the sharpest falls in poverty levels. What helped Odisha was its impressive growth of 9.04% growth in this period.
    2. In Bihar, despite its significant per capita income growth, poverty reduction was not reflected in the 2009-10 numbers. Also, in Odisha, the poverty rate declined 21 per cent in 2009-10 compared to 2004-05, and only five per cent in 2011-12 compared to 2009-10.
    3. Interestingly, if you exclude Bihar from the poverty calculation at national level, the decline in rural poverty would come down by 2 percentage points and rural poverty decline would be less than that in urban areas. Bihar's data on consumption expenditure creates a serious noise factor in the analysis.
    4. Agriculture growth: What worked in Bihar's favor was even better agriculture growth of 15.17% during this period.
    5. Migrant workers: Bihar and Odisha have been major beneficiaries of migrant workers sending their money back home.
4. Rajasthan
    1. It reaped the benefits of way above the average performance on the agriculture front. The state's agriculture and allied sector grew by 7.34% from 1996-97 to 2004-05 and by 6.42% from 2005-06 to 2011-12. The state recorded a meagre GSDP growth rate of 6.34% from 2004-05 to 2011-12, much below the national average of 8.28%.
5. Overall
    1. In India, so far, the growth-poverty reduction connection has remained pretty weak. Before 2005, poverty reductions in fast growing states such as Gujarat and Maharashtra were not significantly more than that in the so-called BIMARU states.
    2. The decline is largely because agriculture sector performed well during fiscal year 2011 and 2012 against a drought situation in 2009. Agriculture sector expanded by 7.9% in 2010 -11 and 3.6% in 2011-12.
6. Urban vs Rural
    1. Rural better than urban. Rural to 25.8% (2011-12) from 42% (2004-05), around 16 percentage points, as against around 12 percentage points in urban areas - 25.7 to 13.7.
    2. The cumulative effect was that overall wages rose by 29% in rural areas between 2009-10 and 2011-12 against 23% in urban areas. This could again be explained by the rural urban migration, as semi-skilled or unskilled workers in the urban areas would send home higher wages back home

Rajan Committee Report

1. Some variables are strongly correlated. eg. NSSO MPCE and poverty ratio. This may lead to double counting.
2. It is not clear whether the variables have been normalized, else it ll give unequal weights. eg. female literacy ratio and per capita expenditure.
3. There is no indicator related to employment or productivity. Incidentally, most of the earlier committees had some measure of per worker productivity, mostly in terms of agricultural productivity or wages.
4. For example, the right approach to measuring the deprivation of SC/ST households would have been to use an indicator of relative deprivation of these households. This would also have created an incentive for state governments to channel resources towards the developmental needs of these groups.
5. The fact that the development index correlated very strongly with the number of districts affected by leftwing extremism in a state shows that developmental deficit and governance deficit are two sides of the same coin.

Sen vs Bhagwati

There are externalities in basic social sectors like health, education, upliftment of marginalised. Markets can't take care of that.

7. Active and sustained government intervention to even things out. Social spending on education. On health. No nutrition. On transportation and communication networks. On minimal safety nets. The market can take care of the cool stuff. The public sector gets a less sexy role: getting the basics right. That is what Drèze and Sen (and frankly, many others) are about.

Failing (7) we have just one option:

8. Sustained, crippling social conflict, not just cutting across class lines but along any marker which can be arrogated for the purpose: religion, caste, geography, language.

Bhagwati

1. Track model of Bhagwati
    1. Successful economic development necessarily occurs in two stages – this is a "two-track" account according to which "Track 1" reforms are designed to increase GDP and pull up the poor; healthcare and educational reforms belong to "Track 2". And that it's only Track 1 which makes Track 2 possible.
    2. Growth, therefore, would not merely pull people above the poverty line but it would have the added beneficial effect that it would generate revenues which could then be used to undertake redistribution.
    3. Significant redistribution in India could not have preceded growth as there were too few rich and too many poor.
    4. Sen believes that India should invest more in its social sector outcomes to boost the productivity of its people and thereby raise growth, Bhagwati argues that we need to focus on growth first. Investing in health and education to improve human capabilities is central to Sen's scheme of things. Without such investments, inequality will widen and the growth process itself will falter, Sen believes.
    5. Bhagwati argues that growth may raise inequality initially but sustained growth will eventually raise enough resources for the state to invest in social sector schemes and

mitigate the effects of the initial inequality.

Synthesis Between the Two

1. Arun Maria, Planning Commission: A focus on job creation will be the best resolution of this debate between growth and development. Quality jobs can help drive inclusion with growth.
2. The debate is not about an embrace versus outright rejection of the market mechanism as much as it is about the sequencing of economic policies.
3. Growth is desirable. But the process of growth --- whether it enriches only crony capitalists or the masses --- is as important as the growth number itself.

Sen

1. That's not how things have happened in the world. They've all done it through increasing capability. I know of no example of unhealthy, uneducated labour producing memorable growth rates!
2. Sen on liberalization: Those who want more liberalization immediately treat you as an enemy because you want the other thing (increased focus on social sector reforms). While actually it is the other thing that makes liberalization viable in a democratic society because that makes people's life better. But when the state does not do it, that is when people's lives go badly and growth potential is badly affected. Nothing is more important to sustain economic growth as a healthy and educated labor force.
3. Sen on cash transfers: What I don't like about cash transfers is that it is just re-distribution and I'm against that. If we raise the money, we should use it for those public services that are lacking. What the poor need is better public services and not cash in their pockets. Given the asymmetry of information, you'll never be able to get there. you have to have basic services for everyone.
4. Sen on importance of social indicators
    1. In all social areas India seemed to be doing worse than many countries which it has overtaken in terms of per capita income- for example, Bangladesh.
    2. India used to be 50 per cent richer than Bangladesh in per capita income terms but is now 100 per cent richer. Yet, in the same period … when, in the early 1990s, India was three years ahead of Bangladesh in life expectancy, it is now three or four years behind. In India it is 65 or 66, in Bangladesh it's 69. Similarly, immunisation: India is 72 per cent, Bangladesh is more like 95 per cent.
    3. Korea, Japan, Singapore, Hong Kong, Taiwan and, to some extent, even Thailand everybody expanded their education base before they could grow.
5. Sen on democracy
    1. The choice those Asian economies made [to extend healthcare, education etc] wasn't a democratic choice, but it was a very smart choice. You can be smart without being democratic.
    2. However, good practice of democracy – well informed and vigorous – can help to select smart governments, humane governments. For this the quality and force of media discussion are important.
    3. But if you are lucky enough to have a friendly authoritarian government, they can take smart decisions without having to rely on forceful media discussion. That's what they did in South Korea and in Taiwan.
    4. But North Korea did not. Nor did Cambodia in the 1970s. China has presented examples of good and smart as well as weak and confused authoritarian rule.
    5. The gigantic famines of 1958-61 resulted from terrible policy choices that could not be changed for three years despite tens of millions dying each year- no political party could criticize the terrible policies, and newspapers could not even cover the bad news.
    6. The elimination of famines was an immediate success of democratic India.
    7. Democracy's difficulty is that the vocal and the active can influence the agenda in a way that the inactive and unvocal cannot. And the active ones have been the relatively poor among the rich – the bottom 40 per cent of the top 20 per cent (though they're still part of the top 20 per cent). So, for example, they have asked for a diesel subsidy, and got it; they asked for a cooking gas subsidy and got it; they insisted on electricity being sold to urban consumers at below cost. There have been many other concessions which have cost money. The surplus has gone in their direction because they've been more vocal. And what is pernicious, or at least disturbing, is that they speak in the name of "ordinary people". But ordinary people don't drive diesel vehicles. Ordinary people don't have cooking arrangements to which gas cylinders can be attached. And many ordinary people don't have electricity. Democracy is a guarantee of process. But offers no guarantee as to how that that process will be pursued and what will come of it.
6. For years, India's economic growth rate ranked second among the world's large economies, after China, which it has consistently trailed by at least one percentage point. The hope that India might overtake China one day in economic growth now seems a distant one. But that comparison is not what should worry Indians most. The far greater gap between India and China is in the provision of essential public services—a failing that depresses living standards and is a persistent drag on growth."
7. Crony capitalism is not a new phrase in the Indian lexicon. The fact that a lot of growth was achieved through crony capitalism, using the same business-politics nexus that the reforms sought to dismantle, is evidence enough of the failure of growth to improve the incomes of everybody. Not only is our tax-GDP ratio among the lowest in the world, it remains at this level, in fact marginally lower than what it was in the 1990s, despite the growth rate accelerating from 6% to more than 8% in the last decade.
8. The benefits of growth do trickle down. The problem is that there is increasing impatience with the pace of the trickle-down, caused by a combination of forces that have been gaining strength in the past two decades. One is increasing acceptance of many fundamental human rights, going beyond political rights. The second is an explosive access to information about haves and have-nots. People want to be included in the benefits of growth now, not later. They want more equity.
9. Sen's economic philosophy stresses the centrality of "entitlements"—in the form of legally enforceable rights—as an instrumental means of delivering the substance of those entitlements to citizens, often directly by the state or its agencies. Thus, as with his much publicized advocacy of the food security Bill, Sen believes that creating a right to food is a crucial first step in ensuring that those in need are fed by a well-functioning and well-funded public distribution system.

Kerala Model

1. Prof. Ramakumar argued that Panagairya was selectively quoting statistics to drive his case and ignoring the regional variations within Kerala, while arriving at his conclusions.
2. Panagariya #1: Poverty fell while inequality rose
    1. Kerala's high level of inequality in consumption expenditure, in absolute terms, is used by Panagariya to argue that the source of poverty decline was income growth, and not equitable development. He claims this to be true right from 1973-74. Panagariya is wrong.
    2. Sharpest fall of poverty in Kerala occurred from the early-1980s onwards. The most remarkable aspect of this poverty decline was that inequality levels also declined alongside. Thus, between 1983 and 1993-94, head count ratio (HCR) of poverty in rural Kerala fell from 39.6 per cent to 25.4 per cent. During the same period, the gini ratio, used to measure inequality, also fell from 0.32 to 0.30.
    3. After 1993-94, poverty levels have continued to fall, while gini ratios have risen. Thus, between 1973-74 and 2004-05, there are two phases: Phase 1, where poverty and inequality fell together; and Phase 2, where poverty fell and inequality rose. Such contradictory outcomes do not allow the kind of generalisation that Panagariya attempts.
3. Panagariya #2: Kerala started at highest level
    1. He argues that Kerala's social indicators are good because "it started at the highest level at independence". He says: "In 1951, it had a literacy rate of 47% compared with 18% for India as a whole and 28% for Maharashtra, the closest rival among the large states. By 2011, these rates had risen to 94, 74 and 83%, respectively. The gains made, thus, equal 47, 56 and 55 percentage points for Kerala, India and Maharashtra, respectively."
    2. Thus Kerala, as per him, has actually done worse! This is obviously crap argument.
    3. Similar is Panagariya's use of statistics in the case of Infant Mortality Rate (IMR). In trying to argue that Gujarat achieved more in IMR than Kerala, he says: "whereas Kerala lowered its infant mortality rate by 46 deaths per 1,000 live births between 1971 and 2009, Gujarat achieved a reduction of 96, Tamil Nadu of 85 and Maharashtra of 74." In 1971, Kerala's IMR was 61 per 1000 live births. To be on par with Gujarat in 2009, Kerala should have had an IMR of -35!
    4. Take the case of IMR. In the early-1950s, the IMR in Kerala was 120, while that in India was 140; in other words, they were largely comparable. These facts cannot be hidden by simply stating that Kerala "started at the highest level at independence".
4. Panagariya #3: Public sector intervention in Kerala is a myth
    1. He rejects the role of public sector interventions in education and health as the source of sustained high levels of education and health in Kerala.
        1. One, about 53 per cent of children in Kerala between ages 7 and 16 study in "private schools".
        2. Two, he says that public expenditure on health in Kerala is barely 1 per cent of its GSDP.
        3. Three, private expenditure on health care far exceeds public expenditure on health care.
    2. As long ago as 1960-61, total government expenditure on education in Kerala was 3.7 per cent of GSDP. Starting at close to 4 per cent of GSDP in the early 1960s, public expenditure on education rose to a peak of 6.5 per cent in 1986-87, and has fluctuated between 5.5 and 6.5 per cent since.
    3. Most remarkably, about 96 per cent of all schools in Kerala are funded by the state. Panagariya's generalised argument about "private schools" in Kerala arises from a lack of knowledge of the way school system is organised in the State.
        1. The Government of Kerala funds two types of schools. The first are schools established, owned and run solely by the State government. Together, they constitute around 36 per cent of all schools in Kerala.
        2. The second type is "aided" schools, which are owned and managed by private agencies. Here, the government meets the major component of their annual expenditure, namely, salaries. Aided schools also receive grants-in-aid from the State government for buildings and establishment, teaching and instructional material (including libraries and laboratories), and recreational facilities. This category covers 60 per cent of schools in the State and predominates at all levels of schooling.
        3. The last category, fully private schools, covers only about 4 per cent of all schools in the State.
    4. Panagariya chides Kerala's public expenditure on health at 1 per cent of GSDP, even while it was the highest for any State in India. Even as he does not use any benchmark to

judge Kerala expenditure standards, he ignores one of the important points argued out by Amartya Sen on whether public spending on education and health can be "afforded" by poor countries: "The viability of this "support-led" process is dependent on the fact that the relevant social services (such as health care and basic education) are very labor intensive, and thus are relatively inexpensive in poor - and low-wage - economies. A poor economy may have less money to spend on health care and education, but it also needs less money to spend to provide the same services, which would cost much more in the richer countries.

5. Even as its public expenditure was 1 per cent of its GSDP, Kerala was able to significantly expand its public health network by the 1970s itself, specially in rural areas.

UN Report on Indian Malnutrition

1. The number of people suffering from chronic hunger in India declined at the fastest pace in 2011-13 since 1990-92, according to a joint report by United Nations' food agencies. The number declined 6.5 per cent in 2011-13 against a reduction of 1.9 per cent in 2008-10. In 2005-07, this rate was 3.2 per cent.
2. The proportion of undernourished people in the total population also came down to 17 per cent in 2011-13 from 18.9 per cent in 2008-10.
3. However, the report, The State of Food Insecurity in the World, stated that if undernourishment in India continues to only decline at this pace, this might not be sufficient to reach the Millennium Development Goal (MDG). The MDG hunger target says the proportion of hungry people in the total population should be halved by 2015, with 1990 as the starting year.
4. Among the emerging developing countries, the proportion of undernourished people remained the highest in India. In China, 11.4 per cent of the population suffered chronic hunger, followed by Brazil (6.9 per cent) and South Africa (less than five per cent) in 2011-13.

(f) Key Trends

1. Change in overall pace: Poverty reduction during 70s, 80s and 90s @ all India level happened at a uniform rate. Only after 2004-05 did the rate increased significantly. This is broadly consistent with other evidence like growth of agriculture wages, GSDP growth rates etc.
2. Inter state differences: The post reform period has seen an increase in divergence in the rates of poverty reduction between the rich states and the poor states. Thus while between 1973-74 and 1993-94, as per Lakdawala, rich states were able to reduce their poverty by 23% (from 53% in 1974-74 to 30% in 1993-94) and poor states by 17% (from 59% in 1973-74 to 42% in 1993-94), in the post reform period (1993-94 to 2009-10) rich states have reduced their poverty by 23% (44% in 1993-94 to 21% in 2009-10) while poor states have reduced it by 12% only (50% in 1993-94 to 38% in 2009-10). There is no reversal of this trend even between 2004-05 and 2009-10. Thus poverty is increasingly becoming concentrated in the poor states. Maharashtra had disproportionately higher share of poverty due to higher rural urban inequalities perpetuated by lower agriculture wages and higher gender disparities.
3. Green revolution: Fallen angels showed an overall decline of 13% in the pre reform period (31% in 1973-74 to 18% in 1993-94) while only 10% in post reform period (28% in 1993-94 to 18% in 2009-10). Between 1993-94 to 2009-10 rural poverty fell by 14% (from 30% to 16%) while urban fell just by 6% (from 26% to 20%).
4. Rural urban differences: The poverty in rural areas is declining at a faster rate @ all India level. Between 1973-74 to 1993-94 the rural poverty rate decreased by 19% (56% to 37%) while the urban by 17% (49% to 32%). In the post reform period, the rural poverty rate decreased by 16% (50% to 34%) while urban by 11% (32% to 21%). The pace of convergence in rich states (26% fall in rural poverty since 1993-94 vs 15% fall in urban poverty) is faster than the pace of convergence in poor states (11% fall in rural poverty since 1993-94 vs 8% fall in urban poverty).
5. Strategy differences: Green revolution based agriculture improvement did it for fallen angels. AP and TN improved the PDS systems. W Bengal has strengthened its panchayats. Kerala focussed on human development.
6. Concentration of urban poor: More than half of urban poor in 2004-05 lived in Maharashtra + UP + MP + TN. This was due to high overall population as well as higher rates of urbanization in Maharashtra and TN and high population + high poverty rate in UP and MP.
7. Chronic poverty: The incidence of chronic poverty was higher in Odisha, UP, MP, W Bengal, Bihar etc. but low in J&K, Punjab. It was also significantly higher for SCs. In some states like Punjab 84% of chronically poor were SCs while in Haryana it was 66%. Similarly in rural areas 45% of chronically poor were landless labor while in urban areas 36% of chronically poor were self employed and 29% were casual labor. Thus we need to address the social inequalities as well and also create 'gainful' employment.

India vs China

1. Studies indicate that while between 1981 and 2001 China decreased its poverty from 53% to 8%, India was able to reduce it only by 17%. Similarly IMR in India is ~ 2x that of China and MMR is ~ 10x.

NAS data vs NSS data Discrepancy

Issue

1. NSS data shows a level of consumption which was close to NAS consumption in 50s, 90% in 1968-69, 75% in late 1970s and currently it is @ 50% of NAS consumption only. It is generally accepted that the discrepancy between expenditure as per NSS and as per NSA is ~ 2% p.a. For instance, the overall proportion of poor is estimated to be 57% and 53% for 1977-78 and 1983 respectively, using the unadjusted NSS distribution. This proportion falls to 43% and 30% for 1977-78 and 1983 respectively, when the adjusted NSS distribution is used.

Drawbacks of NSS Data

1. It reports 0 refusal rate i.e. no one refused to get interviewed. They don't report the extent to which the willing respondents have been substituted for the unwilling ones. It is well documented that wealthy households are less likely to cooperate. Such an exclusion of rich will mean that more proportion of respondents will be poor and also show less inequality and will also not capture full growth in personal consumption.
2. But this also doesn't mean that we should rely on NAS data as PC did until 1990. This is because by multiplying each household's expenditure in NSS data we are assuming that everybody benefitted in the same proportion by the growth.

Drawbacks of NAS Data

1. Non profit organizations and owner occupied dwellings rent: It includes consumption of non profit organizations as well under the private consumption head. It includes imputed rent from the owner occupied dwellings. It is estimated that together these two account for more than half of the discrepancy.
2. Residual method of deriving private consumption: In NAS, most items under private consumption are derived as residuals so that errors elsewhere are reflected under consumption.
3. Old rates used in NAS data (Minhas): For example, consumption of vanaspati = total production (adjusted for imports and exports) - consumption by government and business. In an economy in which all vanaspati is used for household cooking, this gives the right answer. But as the economy grows, consumers eat more meals out, so that an increasing fraction of vanaspati is used by commercial food suppliers. Consumer spending on these services is derived from gross output of the services sector adjusted to a value-added basis by deducting the value of intermediate inputs, including vanaspati. At best, this adjustment is done using one of the rates and ratios, which means progressive and increasing overstatement if intermediation increases with income and if rates and ratios are infrequently adjusted. In the case of vanaspati in India, no adjustment is made at all, so that all vanaspati used in restaurants is counted twice, helping overstate the rate of growth of consumption and GDP and to increase the ratio of national accounts to survey consumption.
4. Revisions in NAS data (Sundaram and Tendulkar): Revisions in some of NAS data are often so large as to cast doubt on the estimates in general. This is closely related to Minhas's concern with the outdated rates and ratios. When the Central Statistical Office abandons a long-used ratio and new survey or other information is collected, information based on actual data paints a very different picture from that based on the long-used approximation.

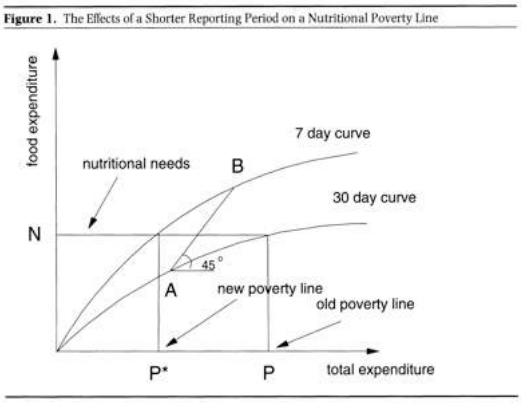
Recall Period Adjustment

1. Based on experiments done by Mahalanobis and Sen in 1954, NSS used 30 day recall period. In the annual surveys from 1995 to 1998, it experimented with using 7 day recall period for high frequency items and 365 day period for low frequency items. Some households were randomly asked questions with the new recall period and some with the old.
2. Using 7 day recall period for high frequency items was found to increase reported expenditure by ~25% and thus would lower poverty ratio. Similarly using 365 day period for high frequency items would also increase reported expenditure as it would fatten the tail while reducing the mean (although people on an average will recall less but those who were reporting zero consumption in 30 days are more likely to report some consumption in 365 days). Studies show this adjustment could remove ~ 175 mm people from below the poverty

line. The 1995 - 1998 survey experiment showed ~ 50% reduction in reported poverty with the new recall period.
3. The experiments showed recall periods produce a vast difference but didn't show which one is better. So NSSO launched a pilot study in the quinquennial survey of 1999-00. 3 different reporting periods were used - 7 days, 30 days and a gold standard of daily visit. Results showed 7 day recall period produced 23% higher reported expenditure. But when compared to daily visits data, 30 day estimates proved to be more accurate for many important commodities including cereals. Over all commodities nothing proved superiority or inferiority of any one method. So in the main quinquennial round each household was asked to report on both 7 day and 30 day period while low frequency items were shifted to 365 day. But which one and in what proportion of the two were used is not known.

Calorie Angel Curve

1. If we take a calorie norm and try to find the minimum income which would enable one to buy just enough calories then the resulting diet can be very cheap but it would be very boring and not preferred by humans. Such a mathematical solution ignores people's behavioral patterns.
2. So a better solution is to look at how people actually consume. If we plot the actual money consumption vs actual calorie intake, we get the Angel curve.
3. It can be seen that a 7 day period will increase both reported expenditure on food (E_f) as well as total reported expenditure (E_t) by the same amount. Thus $(E_f/E_t)_{30\text{ day period}} < (E_f/E_t)_{7\text{ day period}}$. So the new poverty line will be lower (i.e. at lower total expenditure the food expenditure will meet the required calorie threshold). But this depends on the initial ratio of (E_f/E_t). In case of Indian poor, this ratio was already so close to 1 that this adjustment will not meaningfully lower the poverty line.



Poverty Measurement in India
Pitambar Pant (1962)

1. He opined that to lift the bottom 20% people out of poverty, investment and growth are not enough and transfer payments are necessary. Thus came subsidies.
2. The poverty line in rural areas should be Rs.20 per month. For urban areas, it should be Rs.25 per month. It excludes expenditure on health and education, both of which are expected to be provided by the State according to the Constitution and in the light of its other commitments.
3. It represented a broad judgement of minimum needs and was not strictly related to nutritional requirements, although it took them into account.

Dandekar and Rath, 1971

1. They defined state of poverty as a state where a person is not able to get 2 square meals per day. The definition of square meals was fixed to be 2,250 kcal per day. Thus the household olds whose expenditure didn't provide them for food that contained even this much amount of kcal were to be classified as poor.
2. The households under NSS data were classified into groups according to their expenditure. Then for each state rural and urban, it was seen which group's expenses allowed it to consume 2,250 kcal food.
3. Thus a poverty line was arrived for rural and urban areas of each state. The total number of poor in the country were simply summation of all poor in the states. National level aggregate rural line (@ 1960-61 prices) came out to be Rs. 15 per month and urban line to be Rs. 22.5 per month.
4. The only issue was that unlike food, there was no norm for non-food item. So the researchers took some arbitrary expenses for non-food items.

Planning Commission Task Force, 1979

1. Anchoring in calorie norms - normative approach / minimum needs approach: It used recommendations of Nutrition Expert Group (1968) to take rural calorie threshold @ 2400 calories per day and urban threshold @ 2100 calories per day.
2. Behavioral approach: To work out the monetary equivalent, it used 1973-74 quinquennial NSS data. The calorie content of consumption baskets corresponding to various per capita expenditure classes were worked out. Rural poverty line came out @ Rs. 49 per month and Rs. 57 per month for urban areas. Thus, the concept of poverty line used here was partly normative and partly behavioral. Only the national lines were worked out and not the state lines. Price indices @ state levels were used to derive corresponding state lines.
3. Malnutrition vs poverty: This way of deriving the poverty line, while being anchored in a 'norm' of calorie requirement, does not seek to measure the nutritional status, and more specifically the incidence of malnourishment or under-nourishment in the population. It focuses rather on the purchasing power needed to meet the specific calorie intake standard with some margin for non-food consumption needs.

Planning Commission Poverty Lines (1979-93)

1. Rural and urban lines separately calculated for all india. No separate state lines calculated.
2. Calculations done every 5 years based on NSS surveys.
3. Calorie Norm: They are based on a calorie norm of 2400 calories per capita per day for rural areas and 2100 calories per capita per day for urban areas. The poverty line for the base year 1973-74 has been taken as the per capita expenditure level at which these calorie norms have been met and subsequently it was merely adjusted for rise in prices. These were Rs. 49 per month in rural areas and Rs. 57 per month in urban areas.
4. Base year remained 1973-74. This was a drought year and data for only 9 months was available. Studies have shown this data underestimates poverty. All subsequent poverty lines were linked to this number.
5. Price deflators: The initial basket was lost and the price deflator was applied to the final poverty line figure directly. Initially WPI was used. Then private consumption deflator from NAS was used till 1988. Naturally this understated poverty since manufacturing inflation was lower than food inflation. Later it was decided to use CPI - AL in rural areas and average of CPI - IW and CPI - UNME for urban areas.
6. Estimating poor population in states: All India poverty lines were adjusted for state prices via state price indices. Then data from each state from NSS was used to determine how many households fell above the poverty line and how many below.
7. Adjustment procedure: Because aggregate personal consumption expenditure from NSS is different from NAS (national accounts statistics data) and NAS expenditure is more, planning commission used to multiply NSS expenditure by a factor (NAS aggregate / NSS aggregate) while keeping poverty line unchanged.
8. Poverty basket remained 1973-74 basket and didn't change with time.

D T Lakdawala Committee 1993

1. State wise poverty line: The committee recommended 2400 kcal for rural and 2100 kcal limit for the urban. State-specific poverty lines were estimated as follows. The standardised commodity basket corresponding to the poverty line at the national level was valued at the prices prevailing in each State in the base year, i.e., 1973-74. For updating poverty line to the current prices in a given year, state specific consumer price-index was used with appropriate adjustment to weightings.

2. Choice of base year for poverty basket: The committee recommended continuation of 1973-74 basket as the poverty basket. However the consumption preferences of households would have changed. In particular the cereal consumption and prices both came down in relative terms (down from 47% of total consumption in 1977-78 to 38% in 1987-88 in poor rural households and from 35% to 30% in urban poor households), but if we keep the weights constant then we are fixing a lower poverty line. Moreover the survey in that year was not complete (it covered only 9 months). The committee could have used 1977-78 or 1972-73 when full year data were available.
3. Rural vs urban: Since 1993, PC was calculating rural and urban lines separately for each state. While earlier the implicit difference between rural and urban prices was 16%, after 1993 it became 40%. This seems implausible. In some cases it threw up weird results. For example in AP the urban prices were implied to be 70% higher than in rural areas and as a consequence the reported urban poverty was 27% while rural poverty was mere 11%.. Economists like Deaton argue this is because PC was not measuring prices actually paid and once we adjust for that (by taking the prices reported directly in NSS data) the difference becomes close to 16% again.
4. Price deflators: To update the poverty line each year, they suggested CPI be used (after adjusting the food weights to reflect the consumption of poor as in 1973-74). As argued above this lowers poverty line. However, they could have used NSSO annual survey which cover almost 80% of the commodities.

The Suresh Tendulkar Committee 2009
(a) Features

1. Change in poverty line basket (PLB): While economy has grown, the consumption basket of poor has remained unchanged for poverty measurement purposes (fixed to 1973-74 basket). It uses 2004-05 as the base year for the basket.
2. Change in NSSO recall method: He also advocated using mixed recall period (MRP) method (recall window of 1 year for low frequency items and 30 days for some others) since it has been used lately and refrain from frequently changing the method. The earlier recall method used by NSSO was uniform recall period (URP) method (uniform recall window of 30 days). In future MRP* method will be used (recall window of 1 year for low frequency items, 30 days for some and 7 days for some food items).
3. Departure from calorie based poverty line: It argued that the nutritional status based on NSSO data set didn't correlate well with the nutritional outcomes of more specialized surveys (for instance some surveys reveal 42% malnutrition and stunted cases). Also the new consumption basket of poor is no more dominated by food expenditure. It includes manufactured goods, fuel, rent etc. as well. So calorie approach is not suitable.
4. Continuity with earlier poverty line: The earlier urban poverty line was 25.7% (URP approach). The committee decided to arrange expenditure data (MRP approach) of urban consumers in ascending order and found the basket which corresponded to 25.7% head count. Thus urban poverty was kept same. For rural poverty, the same urban basket was used since it was believed that urban consumption basket is superior to the rural basket.
5. Updating poverty line: In the sample years prices per unit can be calculated from NSSO database itself (it contains quantity consumed as well as total expenditure on it). Such prices can be applied on same PLB to arrive at new poverty lines.

(b) Issues with Tendulkar Approach

1. Top-down approach: State wise rural and urban poverty lines should have been used instead of using state price index. This is because people in different regions may have different consumption habits.
2. NSSO methodology: NSSO's sample surveys keep on changing their methodology. So comparison of data of 2 surveys may not give correct results.
3. Question of how to account for state assistance: If lets say state is giving cheap food then expenditure data for people who are covered will show that a lower expenditure is sufficient to get adequate nutrition. But this is very harsh on people who are excluded!
4. FAO argument: While Tendulkar delinks poverty line from calorie intake (calorie consumption based on NSSO data set was not correlated with nutritional outcomes of other specialized surveys) as a rough check he concludes that in urban areas the line corresponded to 1776 kcal (FAO recommendation: 1770 kcal) and in rural areas 1900 kcal (higher than FAO recommendation). FAO norms correspond to that of sedentary work for 50 kg weight (for men) and 45 kg weight (for women). Difference between sedentary and moderates is ~ 500 kcal and between moderate and heavy is ~700 kcal. For a 60 kg man doing moderate work average requirement is 2800 kcal. Is it assumed by PC that poor people need to do only office work and not lift loads?

(c) Delinking from calorie intake argument given by Tendulkar

1. 3 health surveys are used: (i) proportion of underweight children below 5 years (underweight defined as those whose weight-for-age was below twice the standard deviation); (ii) proportion of men aged 15-49 years with low body mass index – norm of low BMI being lower than 18.5; and (iii) proportion women (excluding pregnant women and those who gave birth in the last two months) aged 15-49 years with low BMI.
2. In the absence of objective criteria for assigning unequal weights to the three population segments, equal weights were assigned to derive an aggregate index of malnutrition outcome. Consequently, a simple average of the three proportions above is taken to be an aggregate outcome indicator of malnutrition.
3. When estimated (state/rural/urban) population from NSS is ranked according to ascending size of food expenditure per capita, normative food expenditure per capita is defined by that level of food expenditure per capita that corresponds to cumulative share of population from NSS that equals the index of malnutrition derived from NFHS- III for that state.

Deaton and Dreze - Impact of Inequality on Poverty

1. They try to decompose poverty reduction (between 1993-94 to 1999-00) into poverty reduction due to growth assuming unchanged distribution proportions and poverty reduction due to changes in distribution. The first they isolate by calculating if every person's income grew @ same rate in % terms as the per capita income then what will be the change in HCR. Second was calculated by subtracting this from the actual reduction in HCR.
2. Naturally @ all India level growth alone with no changes in distribution would have reduced poverty more. The dampening impact due to growing inequality was weaker in rural India and sharper in urban India (more pronounced in MP and Kerala) indicating sharper rise in inequalities in urban India. Indian poverty would have been 0.7% less (1.5% less in urban areas) had there been no rise in inequality. If we adjust for the 365 day reporting change in the questionnaire (which lowers the mean and reduces the variance) then the urban inequality rises further.
3. In this period the per capita availability of cereals has gone down but this doesn't question the decline in poverty as tastes of people may be changing towards lower cereal consumption. Moreover the effect of substitution of protein items for cereals by the rich may offset the higher consumption of cereals by the poor.
4. But the overall poverty decline in India doesn't mean it didn't increase in any particular state or group. In states of Odisha and Assam some groups have become poorer due to destruction of local environment. Moreover the overall data doesn't tell us the hidden costs (the negative externalities which are actually a cost to the society). When a worker migrates official data shows a reduction in poverty due to higher income but doesn't show the migration costs included like health, sanitation, congestion, family structure etc.
5. If we look at the multi dimensional nature of poverty we find that in some indicators like decline in TFR, illiteracy rate India has done increasingly well, in some measures like increase in agricultural wages, decline of IMR the growth is slowing and in some measures like sex ratio @ birth it is outright declining.

Q. "By restricting the social benefits to BPL households, the poverty line will be fully converted from a statistical benchmark to a real life social division" (Dreze). Discuss. (2011, II, 15)

1. A person just above BPL is not any different from a person just below BPL. So why should we treat them so unequally that someone who is just below the poverty line is poor is a candidate for transfers and the special attention of the World Bank, while someone who is just above it needs no help and can be safely left to their own devices?
2. BPL based techniques generally depend on HCR which fails to satisfy the strong upward transfer axiom.

Q. Poverty alleviation strategy of the day is moving ahead of redistribution with growth of Chenery and World Bank and Dreze and Sen's growth mediated security and support led security strategies to empowerment, opportunities and security lines. Elaborate. (2011, II, 30)

Poverty Alleviation Strategies

1. Growth based: Policies can be aimed at rapid growth, via generating new and expanding employment opportunities at a faster rate than those generating displacement make a significant impact on sustainable poverty eradication.
2. Direct handling of poverty: Direct income-generating wage and self-employment programmes.
3. Creating capabilities: Public expenditure towards providing primary health and education services help create higher income-earning capability among the poor households. These are important non- income dimensions of poverty. This capability from the supply side interacts with expanding labour-demand for better skills generated by rapid growth and thereby results in sustainable poverty eradication at the household level.
4. Dreze and Sen approach: Growth mediated security relies upon promoting economic growth and taking advantage of the extra resources, both in terms of private incomes and providing a basis for public support. Support led security directly attacks the problem through public programmes such as employment provision, income redistribution, health care, education. Furthermore, they note that both strategies have been successful in reducing poverty in countries

as diverse as Hong Kong, Singapore and South Korea ("growth mediated security"), and China, Jamaica, Chile and Costa Rica ("support led security"). However, they also note the similarities in the two strategies; namely the critical importance of public provision for primary health care and basic education. Furthermore, if economic growth is to improve living conditions it must be of a participatory form which provides remunerative employment on a wide scale.

5. World bank approach: It emphasizes the importance of labour-intensive growth and primary education and health in successful poverty alleviation. In many respects these interventions are necessary to "make trickle-down work".

Q. Discuss the poverty trends - both rural and urban, between 1973-74 and 2004-05 across states in terms of pace of reduction and concentration and relate them with changes in growth rates between the pre and the post liberalization periods. (2010, II, 60)

Q. Critically assess the Tendulkar committee's approach to measuring poverty in India. (2010, II, 15)

Q. Recent trends show that poverty incidence in urban areas is higher than its rural counterpart in more prosperous states. What factors, do you think, explain this? (2010, II, 20)

Q. Carefully examine and analyze the argument that over the last 2 decades there is an increasing divergence between the incidence of poverty based on the planning commission's expert committee methodology and that based on calorie intakes as obtained from the national sample surveys. (2009, II, 60)

Planning Commission Approach

1. It was based on a fixed consumption basket (based on 1973-74 pattern) anchored in a calorie norm of 2400 kcal. They evaluated the cost of this basket in different states (rural and urban areas) @ 1973-74 prices and adjusted for the rise in prices (using adjusted CPI - AL and CPI - IW).
2. At first glance, this sort of updating might be seen to preserve the original intent, and certainly, if price inflation is correctly calculated, a household at the poverty line in India in 2009 has the same purchasing power as a household at the poverty line when it was first drawn up in 1971. Yet people at the same level of living purchase fewer calories now than they used to, presumably because fewer of them are engaged in manual labor in agriculture and so need less energy or simply changes in tastes, so that, if one were really to believe in a fixed calorie standard, the poverty line would have to be revised upward.
3. But such revision is something for which there is typically little political support, in India or in the US, if only because raising the poverty line would increase the number of people designated as poor which, in the absence of legislative changes, would trigger additional progressive redistribution.

Q. Discuss the nature and incidence of rural poverty in India. What suggestions do you offer to solve it? (2007, II, 20)

Unemployment

Unemployment Measurement Criteria

Prof. Raj Krishna

1. Time criterion: This refers to identifying people who had no gainful work for more than a predefined standard.
2. Willingness criterion: This refers to counting only those who are willing to work at the going wage rate.
3. Income criterion: This considers those persons as unemployed whose income (or expenditure) is below a predefined 'poverty norm' generally fixed on the basis of minimum needs.
4. Productivity criterion: This considers those people as unemployed whose productivity is below a predefined standard.

Prof. A K Sen

1. Income aspect: It considers only the income which is derived on the condition that one works and not otherwise.
2. Production aspect.
3. Recognition aspect: All those persons who are seeking work regardless of whether or not they already have some job should be classified as unemployed.

Unemployment Measurement Methods

Usual Principal Status

(a) Features

1. People are asked to reveal their employment status over past 1 year and according to principal status i.e. primary industry. He may also be engaged in subsidiary activities to supplement his income.
2. Under UPS employment, the number of days engaged in principal activity determines the employment status.
3. Under UPSS employment, the number of days engaged in principal + subsidiary activities together determines the employment status.

(b) Drawbacks

1. UPSS and UPS understate employment as most people will like to be considered employment as it enhances their social status. So it is not able to capture disguised employment at all. Thus at max, it can give chronic unemployment.
2. UPS/UPSS unemployment has been only 2-3% which is a joke.
3. It considers women who withdraw themselves from labor force during the slack seasons as "not available for work" instead of considering them as unemployed.

Weekly Status Rate

(a) Features

1. A person is asked to give the number of hours worked in past 7 days. If he has worked even for 1 hour, he is considered employed.

(b) Drawbacks

1. While this method may measure chronic and seasonal unemployment, it fails to measure disguised unemployment.

Current Daily Status

(a) Features

1. A person is asked to give the number of hours worked on the previous day only. If < 1 means unemployed, if between 1 and 4, then only half unemployed and more than 4 means fully employed. Thus it gives time rate of unemployment. Households are surveyed uniformly throughout the year.
2. CDS unemployment is 6.6% in 2009-10 vs 8.3% in 2004-05 which is closer to reality.

(b) Drawbacks

1. Even it can't fully captured disguised unemployment as even though the productivity is very low a person is "employed" for a long time.

Trends in Unemployment

NSSO 2011 - Employment Trends in Agriculture

1. While the farmer population in India is shrinking in absolute numbers (9 million in past decade), the number of agricultural laborers has been increasing and they now outnumber the farmers.
2. Owing to the pressure of population, the average size of land holdings is getting more fragmented over time. Farming at the margin, thus, is getting more unviable, forcing small cultivators to join the growing ranks of agricultural laborers and also seek non-agricultural employment.

Population Anomaly in Census (Why abrupt change in employment)

1. The Census of 2001 projected India's population for 2011 at 1,192,506,000. According to the Census of 2011 the actual population of India that year was 1,210,569,573. Therefore the Census of 2001's projection for 2011 underestimated the actual number by 18,063,573 (18.06 million). This is for the year 2011.

2. It can also be safely assumed that the population projection for 1 January 2010 made by the NSSO using Census of 2001 is also an underestimate.

NSS 2011-12 on Employment

An examination of sectoral elasticities at the global level by Kapsos (2005) showed that all the three sectors (primary, secondary and tertiary) have experienced employment growth during 1991-2003, though the elasticity of services employment to gross domestic product (GDP) was nearly three times as large as the corresponding fi gures for agriculture and i ndustry. This implies that at the global level there is evidence of structural change, as employment is being generated in the service sector at a considerably faster rate than in the other sectors. the service sector was both the fastest-growing sector and the sector with the most job-intensive growth. Indeed, for every 1 percentage point of growth in service sector value added, employment increased by 0.57 percentage points, while the corresponding fi gure for agriculture and industry stood at 0.41 and 0.28 percentage points, respectively.

INDIA:

On the positive side, there has been a shift in employment in favour of somewhat larger enterprises (by employment). Between 2004-05 and 2009-10, there has been an increase of 5 percentage points in employment in enterprises employing 20 workers and more (from 11.8% of all non-agricultural workers in 2005 to 17.1% in 2010), along with a decline in employment in smaller enterprises – those employing less than six workers from 75% to 65.6% (Mehrotra et al 2012). Further, there has been a consistent increase since 1999-2000 onwards in regular wage/salaried employment (from 58 million in 1999-2000 to 71.7 million in 2009-10), as opposed to casual employment or self-employment.

During 2009-10 and 2011-12, 13 million workers withdrew out of agriculture. That is nearly as large as the absolute decline in workers in agriculture (14 million) that occurred between 2004-05 and 2009-10. There was no absolute decline in agricultural employment between Independence and 2004-05, which began after 2005

Manufacturing sector employment remains a concern, d espite rapid manufacturing-output growth. The increase by nearly 12 million in manufacturing sector employment in the fi rst half of the decade (2000-05) was offset by a decline of 5 million in the second half of the decade (2005-10).

The 18 million i ncrease in jobs in the construction sector were offset by the 5 million decline in manufacturing sector, resulting in industrial employment increasing by 13 million in the period 2005-10. The 68th round data suggests that industrial employment has increased by 15.7 million during 2010-12. The disaggregated data for 2011-12 brings good news for India's manufacturing sector. It suggests that employment in manufacturing rose by 8.9 million in this two-year period, while non-manufacturing (mostly accounted for by construction) rose by 6.8 million.

On the other hand, even though the present growth phenomenon is termed to be service-led growth, there has been a rather meagre increase of 4 million jobs in this sector between 2005 and 2010 when services sector grew by about 10% per a nnum. In contrast, employment in services had grown by 18 million between 2000 and 2005. The data for 2011-12 shows that the services employment has increased by an overwhelming 11 million in this two-year period between 2009-10 and 2011-12 – a signifi cant acceleration in job creation, compound to the latter half of the previous decade. If we look at sub-sectors within services, traditional sources like trade and repair are the most important contributor to employment (Table 1). It accounts for more than one-third of the total services employment in the economy, both at the beginning as well as at the end of the decade. Most of the increase in employment for the sector was accounted for by retail trade.

One would have expected that at least in the allied activities in agriculture – horticulture, animal husbandry, forestry and fi sheries – there would be an increase in employment. However, it is intriguing that employment in these activities too declined in absolute terms from 50.8 million in 2004-05 to 34.6 million in 2009-10. Since income has been growing rapidly, and the income elasticity of demand for eggs, milk, fi sh, fruits and vegetables is high, the consumption of these products is increasing. However, employment in these "allied agricultural" activities has declined.
There may be several reasons for this apparently contradictory phenomenon, with reasons varying by sub-sector of noncrop agriculture. For instance, Jha (2006) points out that a llied activity in agriculture saw decline in employment (though an increase in value added) even in the 1990s. Since 1997, there has been an absolute decline in cattle and goat

population which suggests a reason for decline of employment in the livestock sector. Similarly, fi sheries saw a transformation, with marine fi sheries losing its dominance to culture fi sheries; the latter is less labour-intensive than marine fi sheries. A d ecline in employment in forestry could be on account of a decrease in forest area in the country. A fi nal reason may have to do with the increasing pressure on women's time. Male migration out of rural areas has continued unabated, increasing the feminisation of crop agriculture, leaving women with less time to rear poultry or livestock (ibid).

1. Labour force participation rate (LFPR) in Usual Status (ps+ss)
   - About 40 per cent of population belonged to the labour force - 41 per cent in rural areas and 37 per cent in urban areas.
   - LFPR for males was nearly 56 per cent and it was 23 per cent for females.
   - LFPR was about 55 per cent for rural males and about 56 per cent for urban males. It was about 25 per cent for rural females and about 16 per cent for urban females.

2. Worker Population Ratio (WPR) in usual status (ps+ss)
   - WPR was 39 per cent at the all-India level- 40 per cent in rural areas and 36 per cent in urban areas
   - WPR for males was nearly 54 per cent and it was 22 per cent for females.

4. Growth in employment between 66th round and 68th round:

According to the usual status (ps+ss), the workforce at the all-India level, was about 459.0 millions (rural male: 231.9, rural female:104.5, urban male: 99.8 and urban female: 22.8) as on 1st January 2010 (NSS 66th round) which increased to 472.9 millions (rural male: 234.6, rural female:101.8, urban male:109.2 and urban female: 27.3) as on 1st January 2012 (NSS 68th round), indicating a growth of about 13.9 millions of the workforce at the all-India level between 66th round and 68th round.

5. Industry-wise distribution of usual status (ps+ss) workers
   - Among the workers in the usual status (ps+ss), about 49 per cent, 24 per cent and 27 per cent were engaged in agricultural sector, secondary sector and tertiary sector, respectively.
   - In rural areas, nearly 59 per cent of the usual status (ps+ss) male workers and nearly 75 per cent of the female workers were engaged in the agricultural sector. Among the male workers, 22 per cent and 19 per cent were engaged in secondary and tertiary sectors, respectively. The corresponding proportions for female workers were 17 per cent and 8 per cent, respectively.
   - In urban areas, nearly 59 per cent of male workers and 55 per cent of the female workers were engaged in the tertiary sector. The secondary sector employed nearly 35 per cent of the male and 34 per cent of the female workers. The share of urban workforce in agricultural sector was nearly 6 per cent for male workers

1. Overall employment trends
   1. 2004-05 to 2009-10: 2.5 mm new jobs. 2009-10 to 2011-12: 13 mm new jobs.
   2. Total employment has risen from 460 million in 2009-10 to 473 million in just two years.
2. Agricultural employment trends
   1. Employment in agriculture had been rising since Independence in absolute terms.
   2. It rose by 21 million during 2000-05.
   3. But it fell during 2004-05 and 2009-10 by 14 million.
   4. During 2009-10 and 2011-12, agricultural employment fell by 13 million, fastest decline.
   5. The share of agriculture in total employment was 60% in 1999-2000 and fell to 53% in the 10-year period ended 2009-10. In 2011-12, the share of agriculture in total employment stood at 49%, a four-percentage-point fall within two years.
3. Rural employment trends
   1. In 2009-10, the share of employment of agriculture for rural males was 65% but dropped to 59% in 2011-12.
   2. This was made up by the increase in employment in the secondary sector (construction, rural jobs guarantee scheme and so on) and the tertiary sector. Their proportion rose from 19% to 22% and 18% to 19%, respectively.
4. Services employment trends
   1. Services employment, which increased by over 18 million during 2000-05, rose by merely 3.5 million during 2005-10 even though services output grew by about 10% per annum during the period.
   2. Services sector employment has witnessed an overwhelming increase in these two years. While it grew by merely 3.5 million during 2004-05 and 2009-10, it rose by 11 million in just two years, during 2009-10 and 2011-12.
5. Industrial employment trends
   1. During 2004-05 and 2009-10, it was the 18 million increase in construction employment, offset by a 5 million decline in manufacturing jobs, that resulted in an increase of 13 million jobs in the five-year period in the industrial sector as a whole.
   2. During 2009-10 and 2011-12, industrial employment (manufacturing + non-manufacturing) grew by 14.5 million. While the break up between manufacturing and non-manufacturing sector employment is not given for 2011-12, it is expected that it is mostly in the construction sector.
   3. During 2004-05 and 2009-10, manufacturing employment fell by 5 million after having increased by 12 million in the first half of the decade.
6. Casualisation trends

1. Overall positive movement. Regular workers increased by 13 million in the 2 year period.
2. Self-employment increased by 11 million and casual workers declined by 12 million.

7. Gender trends
    1. During 2000-05, 26 million females joined the workforce. More than 90% of the incremental workforce among rural females became self-employed in agriculture.
    2. In the latter half of the decade, by contrast, while male employment increased by 23 million, female employment declined by 21 million.
    3. Even during 2009-10 and 2011-12, the female labor force participation rate, especially for rural females, continues to fall. However, compared to a withdrawal of 21 million females from the workforce in the second half of the decade, there is an increase of about 1.5 million female workers, guided by greater opportunities in urban areas, during 2010-12.
    4. The number of women in India's workforce fell from 28.7 per cent in 2004-05 to 22.8 per cent in 2009-10, and even further to 21.9 per cent in 2011-12, according to the latest report from National Sample Survey Office (NSSO).
    5. The proportion of women employed in agriculture dropped from 79% to 75%, while it rose from 13% to 17% in the secondary sector, the proportion employed in the tertiary sector remained unchanged at the level of 8%.

Female Workforce Participation Rate Trends

1. India, globally, ranks eleventh from the bottom in female workforce participation and despite being at the low 30% for a long time, it fell to 24% only now.
2. Income effect: as incomes grow, participation of females declines.
3. Education effect: Females are staying in school longer. Fertility rates are declining. Female participation in higher education has seen a revolutionary rise. In urban India, female enrollment is now slightly higher than male enrollment.

Causes Behind Recent Unskilled Labor Wage Rise

1. MGNREGS is too small to be singularly responsible for it. The utilization levels of this scheme are low and are declining (54 days in FY10 to only 36 days by FY13).
2. Primary checks in states such as Maharashtra suggest that a reverse migration wave is driving the labor shortage. A combination of improved governance and a sharp pick-up in GDP growth in traditional labor-supplier states such as Bihar and Chhattisgarh is responsible.
3. The demand for higher education in labor-supplier states contributes to labor shortage as well. A decade ago the workers had never seen a textbook. Today several workers have been part of the formal education system for 4-5 years and aspire to educate their children even more. Most impressive gains in literacy have been made in the traditional labor supplier states.
4. Women's labor participation rates have declined as a rising number of women are now choosing to pursue education. The fact that women's literacy rates are rising at a faster rate than those of men corroborates this dynamic.

Labor Force

1. Decline in labor force growth rate: Between 1983-84 to 1993-94 the labor force grew @ 2.3% p.a. But between 1993-94 and 1999-00 it grew only @ 1.5% p.a. Between 1999-00 to 2004-05 the labor force grew @ 2.85% again. One reason given for this decline is that people are enrolling more in higher education. NSSO 2009-10 shows that the number of young people in higher education, and therefore, out of the workforce, has increased causing a drop in the labour participation rate. The total number of young working-age (15-24) people who continued in educational institutions doubled from about 30 million in 2004-05 to over 60 million in 2009-10. The result was lower expansion of 12 mm only in labor force. But this will increase when the educated come back in the labor force. Another view is that lack of work opportunities is leading to a fall in labor force growth rate. This is supported by the NSS data that participation rate for women has specially gone down form a stable 28 - 30% range to 23%.
2. Rural vs urban: Urban labor force is increasing @ a rate of 3.33% compared to 1.66% rural labor force and 2.1% national rate. Structural unemployment is a problem in urban areas because the skills and needs of jobs may not match so a person may not work.
3. Male vs female: Overall male participation rate is higher than female rate. Urban male is higher than rural male. But female rural rate is higher than female urban rate.
4. Demographic dividend: The labour force in India is expected to increase by 32% over the next 20 years, while it will decline by 4% in industrialized countries and by nearly 5% in China.

Gainful Employment

1. By any standards it can be seen that the unemployment rate in India is much lower than the poverty rate. This is because the income or productivity criteria of employment are not considered by the government while arriving at the employment status of a person. Given this difference, the need today is to focus on generating gainful employment instead of just employment.

Regular Wage Employment, Self Employment and Casual Employment

Sector	1972-73	1983	1993-94	1999-00
Regular Wage	15	14	13	14
Self Employed	61	57	55	53
Casual Wage	23	29	32	33

1. Casualization of labor: It is clear from the above that the share of casual wage workers is rising (from 23% in 1972-73 to 32% in 1993-94 and 33% in 1999-00). This is coming at the cost of self employed category (from 61% in 1972-73 to 55% in 1993-94 to 53% in 1999-00) while the regular wage category has remained the same. This suggests that agriculture is becoming unviable to most marginal farmers and they are migrating into the casual wage sector. This is also reflective of the increase in public constructions programmes.
2. NSSO shows vast majority of new jobs created between 2004-05 and 2009-10 was in casual employment, mainly in construction. Even in organized sector the increase in employment has been mainly on account of informal employment of workers.
3. How is manufacturing contributing to casualization of labor post reforms: Increased outsourcing instead of vertical integration means a big organized sector company is now doing less work on its own. Instead it now depends on the unorganized sector units for supply of parts. Thus labor is moving to the unorganized sector.
4. Labor laws.
5. Organized sector has actually shown a decrease in employment between 1993-94 to 2004-05 of -.33% p.a. while between 1983-84 to 1993-94 it grew by 1.2% p.a. Employment generation in public sector has been -0.70% in this period compared to 1.55% between 1983-84 to 1993-94. Private sector job creation rate has increased from 0.44% to 0.60% in this period. Total people employed in organized sector are 28 mm in 1993-94 which fell to 27 mm in 2004-05.
6. About 95% of the new opportunities created in the 11th FYP were in unorganized sector. Organized sector only accounts for 7% of the total employment.

Unemployment and Employment Rates

1. Rural vs urban: Unemployment rate in urban areas is higher than that in rural areas. In 1983-84 the urban rate was 9.5% vs 7.9% rural (difference of 1.6%) , in 1993-94 it was 7.4% vs 5.6% rural (difference of 1.8%) and in 1999-2000 it was 7.8% vs 7.1% rural (difference of 0.7%).
2. Female vs male: Female unemployment is higher than male unemployment in urban areas vs roughly equal in rural areas. In 1983-84 the urban female unemployment was 11% (difference of 1.8% over urban males), in 1993-94 it was 10.5% (difference of 3.8% over urban males) and in 1999-00 it was 9.4% (difference of 2% over urban males).
3. Education and unemployment: Unemployment rate for graduates and above has been declining both in rural and urban areas. But in rural areas the rate is higher indicating lack of work opportunities.

4. Overall unemployment: In 1983-84 it was 8.3%, in 1993-94 it was 6%, in 2004-05 it was again 8.3% and in 2009-10 it was 6.6%. The fall between 1983-84 and 1993-94 was because growth rate in employment 2.6% p.a. was higher than growth rate in labor force (2.3% p.a.). The rise from 1993-94 to 2004-05 was because the growth rate in employment was 1.9% p.a. while the growth in labor force was 2.1% p.a. Between 2004-05 and 2009-10, the overall labour force expanded by 12 million while 18 million job opportunities were created on current daily status basis. Employment data of the 66th round of NSS shows that only 2 million jobs were created between 2004 and 2009, even as the economy grew at 8.43% annually (Aggarwal, 2011). Chandrashekhar and Ghosh (2011) argue that there has been a dramatic deceleration in total employment growth, from an annual rate of around 2.7% in the previous five-year period to only 0.8% in the latest quinquennium.
5. Interstate variations: Unemployment rates were very high in Kerala, UP and Bengal.
6. Employment growth rates: It is heavily dependent upon agriculture. For the overall period between 1993-94 to 2004-05 it was 2% i.e. same as that in 1980s. In 70s it was 2.8%. While agriculture fell, construction and manufacturing saw a jump (manufacturing between 1999-00 to 2004-05). Services except the financial, business and public administration are seeing a rise in employment generation. Urban employment growth rate has been higher than in rural areas.

Sector	1983 to 1993-94	1993-94 to 2004-05
Agriculture	1.4	0.7
Manufacturing	2.0	3.1
Construction	5.7	7.2
Trade, H+R	3.8	5.2
Other services	3.9	1.2
Overall	2.1	1.9

Falling Employment Elasticities

Sectors	**1983 to 1993-94**	**1993-94 to 1999-2000**
Total	0.41	0.15
Agriculture	0.50	0.00
Manufacturing	0.33	0.26
Trade	0.63	0.55
Transport, Storage, Communications	0.49	0.69
Construction	1	1
Finance, Real Estate, Business Services	0.92	0.73
Community and Personal Services	0.50	0.07

(a) Manufacturing

1. Although GDP from manufacturing increased at 9.5% per annum between 2004-05 and 2009-10 and there was some increase in employment in the organized sector, NSSO suggests that overall employment in manufacturing actually declined during this period. The implied shake-out of labour from the unorganized sector.
2. Labor laws is not a reason because evidence shows that during the slowdown of 1997-04 more than 1 million workers were laid off in organized sector. Even in recent slowdown, more than 30K workers have lost their job in textiles sector.
3. Export oriented sectors: Export oriented sectors showed a high employment elasticity of 0.48 in 90s. Thus they should be encouraged.
4. Reasons for low manufacturing elasticity: Splintering, promotion of skill intensive industries instead of labor intensive due to rigidity of labor laws.
5. Goldar (2009) and Chandrashekhar (2009) show that exports and domestic demand growth has mainly favored products which are more skill and technology intensive. Moreover the relative cost of capital to wages has also gone down leading to substitution of capital for labor.

(b) Agriculture

1. Lewis model: Labour is moving out of agriculture as predicted by the Lewis model, without affecting productivity in agriculture because of the prevalence of disguised unemployment. This means that the tendency is a wholly positive one. The problem with this argument is that the increase in non agriculture employment is nowhere near enough to explain the dramatic decline in agricultural employment generation. Not all the increase in such employment may be the result of positive pull factors. Rather, it possibly reflects a distress phenomenon.
2. Farm mechanization.
3. Changing technology and lack of credit: There is much greater use of a range of monetized inputs, including new varieties of seed marketed by major multinational companies. Small cultivators who take on debts (often from informal credit sources at very high rates of interest) in order to pay for these cash inputs find themselves in difficulty if for some reason there is crop failure or output prices remain low. Since they have smaller seasons, large cultivators find it beneficial to hire equipment.
4. Growing concentration of land holdings: It is now clear that this period witnessed a significant degree of concentration in terms of operated holdings (proportion of landless farm households in rural India rose from 39% in 1993 to 41% in 2000 and number of marginal farmers increased from 19% in 1993 to 22% in 2000), which reflected changes in both ownership and tenancy patterns. Many small and very marginal peasants lost their land during this period. It is a well documented fact that farm productivity is inversely related to farm size. Moreover mechanization often replaces labor in larger farms due to economies of scale.

(c) Services

1. Services growth has been led by sectors with low employment potential: In 1999-2000, share of trade, hotels and restaurant in services employment was 34% and its growth rates were 6% in 80s, 7.3% in 90s, 9.5% in 2000s. Share of community, social and personal services in services employment was 31% and its growth rates were 6.5% in 80s, 7% in 90s, 8% in 2000s. Share of construction in services employment was 16% and its growth rates were 7.7% in 80s, 5% in 90s, 4.3% in 2000s. Share of transport, storage in services employment was 8% and its growth rates were 6.3% in 80s, 7% in 90s, 8% in 2000s. Services which grew rapidly (business services, financial services, communication) together account for < 10% of services employment.
2. Trade has not generated growth in employment intensive services: Exports in business and communication services have gone up but services with high employment potential like trade, hotels and restaurant, community, social and personal services, construction services and transport have not witnessed a rise in their exports. Trade therefore has not improved the growth of services that have high employment elasticities. The share of hotel and transportation in exports has declined by 8% between 2000 and 2010, share of trade, construction and community services is negligible while major growth has been in communication and business services.
3. Rising labor productivity contributed as well. Gordon and Gupta (2004) argue that normal tendency is for the share of services in employment to rise faster than their share in GDP but in India this has not been the case and shows no such tendency even in the recent data between 2004-05 and 2009-10 (Aggarwal, 2011). This indicates continuous rise in the labor productivity in the sector. Highest productivity is in IT and financial services sector. Thus services sector is marked by a dualism. There is a sub segment which is high paying but employs very less number of people and bulk is low paying but high employment.

Sectoral Composition

1. There is a sharp decline in child labor and increase in school education which has led to decline in workforce. This can be seen in declining number of people in the workforce from 0 - 24 years of age. Enrollment figures show that people in school in both 5 - 14 and 15 - 19 year age groups has gone up as a % of population by 5 - 10 % points. But the number of females working is falling even in 25+ year age group as well.

Table 1: Share of Employment and Gross Value Added (1999-2000, 2009-10; in %)

Sectors	Shares			
	1999-2000		2009-10	
	Employment	Gross Value Added (GVA)	Employment	GVA
Agriculture	59.9	23.8	53.2	14.6
Manufacturing	11.1	15.5	11.03	15.9
Non-manufacturing	5.3	11.8	10.49	12.2
Services	23.7	48.9	25.28	57.3
Total	100	100	100.0	100

1. Pace of jobs created declined sharply between 2004-05 and 2009-10 and only 2 mm jobs were created while it was 60 mm in previous 5 years.
2. Formal employment has declined from 9% in 1999-00 to 8% in 2004-05 to 7% in 2009-10. Even the absolute number of formal jobs has declined from 35 mm in 1999-00 to 33 mm in 2009-10 while the informal jobs have increased from 360 mm to 430 mm. Informal employment in organized sector now stands @ 7%. 84% is in unorganized sector as against 86% 10 years ago.
3. There are 2 movements taking place - (a) from agriculture into construction. Between 2004-05 to 2009-10 agriculture lost 14 mm workers (loss in livestock and horticulture was 16 mm!) while construction gained 18 mm workers. Share of non agricultural employment has gone up from 44% to 47% in last 3 years. Out of 63 mm additional jobs created in economy since 1999-00, 55 mm are non agricultural (27 mm are construction!). (b) from informal unorganized into informal organized. This can be seen in a decline of 8.5 mm workers in informal unorganized and increase in 13 mm workers in informal organized between 2004-05 and 2009-10. This is also reflected as the number of workers employed in 20+ worker firms has gone up while those employed in 6- firms has come down.

Table 8: Employment across Various Sectors (in millions, 1999-2000, 2004-05, 2009-10)

Sectors	Employment across Various Sectors			Absolute Increase in Employment	
	1999-2000	2004-05	2009-10	1999-2000 – 2004-05	2004-05 – 2009-10
Agriculture	237.67	258.93	244.85	21.25	-14.08
Manufacturing	44.05	55.77	50.74	11.72	-5.03
Mining and quarrying	2.17	2.64	2.95	0.47	0.31
Electricity, gas and water supply	1.13	1.30	1.25	0.17	-0.05
Construction	17.54	26.02	44.08	8.48	18.06
Non-manufacturing	20.84	29.96	48.28	9.11	18.32
Trade	36.63	43.36	43.53	6.74	0.17
Hotels and restaurants	4.62	6.10	6.13	1.48	0.03
Transport, storage and communication	14.61	18.47	19.97	3.86	1.5
Banking (and insurance)	2.25	3.10	3.82	0.84	0.72
Real estate, renting and business activities	2.67	4.65	5.75	1.98	1.12
Public administration and defence	10.48	8.84	9.46	-1.64	0.62
Education	8.47	11.43	11.85	2.96	0.42
Health	2.62	3.34	3.59	0.73	0.25
Other services	11.85	13.51	12.24	1.66	-1.27
Services	94.20	112.81	116.34	18.77	3.53
Total	396.76	457.46	460.22	60.70	2.76

Source: NSS Employment and Unemployment Surveys, various rounds.

Table 4: Employment Shares of Major Sectors (%)

	1972-73	1977-78	1983	1987-88	1993-94	1999-2000
Agriculture	74.0	72.3	68.4	65.5	60.38	56.70
Industry	11.4	12.3	13.7	15.5	15.82	17.56
Services	14.6	15.4	17.5	18.4	23.80	25.74

1. Agriculture: Its share was 68% in 1983, 61% in 1993 and now 52%.
2. Manufacturing: Its share was 11% in 1983 and 1993 and now 13.5%. Between 2004-05 to 2009-10, manufacturing grew @ 9.5% but overall manufacturing employment declined mainly in the unorganized sector.
3. Construction: Its share was 2.5% in 1983, 3.5% in 1993 and now 6%. This increase is due to projects like MGNREGS, Bharat Nirman.
4. Tourism, communications, financial sector: Their share has risen in their share since liberalization from 12.5% in 1993 to 20.5% now. In 1983, their share was 10.5%.
5. Focus areas: For additional job creations, PC focus is on tourism, manufacturing, agriculture, construction and communications in that order.
6. According to Labor Bureau Survey, in 2011 the employment increased by almost 10 mm with ~75% share in increase by IT/BPO sector followed by 10% in metals. Export oriented units have a larger share in the increase.

Unemployment Strategies of Government

Phase 1: 1950 - 1972

1. Unemployment was not considered to be a major problem and it was thought that a high growth rate (5%) coupled with some emphasis on SSI sector would take care of employment problem. Thus the 2nd FYP noted that while the economy has abundant labor, the considerations of size and efficiency should not be set aside to emphasize employment.
2. But actually the economy grew just by 3.5%, employment by 2% and labor force by 2.5% p.a. in this period. This led to the doubling of unemployed from 5 mm 1956 to 10 mm in 1972. These figures are only approximations as the detailed data on unemployment began to be collected by NSSO only in the quinquennial surveys from 1972-73.

Phase 2: 1972 - 1992

1. The NSS 1972-73 revealed that the unemployment rate on CDS basis was 8.4%, poverty was 54% in rural areas and 41% in urban areas. Thus the approach to tackle unemployment went a sea change in mid 70s. The 5th FYP (1974-79) sought to focus specially on employment intensive sectors. It also recognized that growth alone can't tackle unemployment and we needed dedicated employment focussed and poverty alleviation programmes.

Swarnjayanti Gram Swarozgar Yojna (SGSY)

Features

1. Integrated Rural Development Programme (IRDP) was launched in 1980 which aimed to extend credit to create self employment in rural poor. 30% of the beneficiaries were intended to be women but it was found out only 5% were women.
2. Then SGSY was launched in 1999. It aims at giving credit to rural BPL families and their Self Help Groups with focus on women.
3. It mandates 49% of benefits to be given to women and mandates that 59% of the SHGs formed in an administrative unit be women SHGs.

Performance

1. In the SGSY it was found 59% beneficiaries were women. But the assumption here is that accessing credit is the one way ticket to lift above poverty. However, these enterprises also need backward and forward linkages to succeed, credit alone is not sufficient.
2. Nearly 95% of the SHG loans are regular in repayment and average loan per SHG is Rs. 65,000.

Q. Examine the key elements of SGSY. What are the major problems in its implementation? (2010, II, 20)

Rising Farm Wages in India - Gulati
The 'Pull' and 'Push' Factors

However, during the
2000s, there is a sort of v-shape behavior in real farm wages, declining by 1.8 percent
p.a. during 2000-01 to 2006-07, and then rapidly rising by 6.8 percent p.a. during
2007-08 to 2011-12, and it is this later half that seems to be the result of MGNREGA
'push' as well as strong growth 'pull'. international experience in developing world does suggest that
when economies grow fast, labour moves out from agriculture to non-agriculture
sectors, particularly construction in urban areas. This often acts as a strong 'pull. What we know is that the share of work force engaged in Indian
agriculture declined from almost 65 percent in 1993-94 to only about 53 percent in
2009, and that of construction increased from 3.1 percent to 9.6 percent over the
same period. The empirical results are interesting: that the growth 'pull' factors seem to
have influenced more the rise in farm wages since 1990-91 than the 'push' factor of
MGNREGA. Overall,
the results suggest that the 'pull strategy' works better than the 'push strategy' to
raise farm wages over longer term.
These results raise a pertinent policy issue: given fiscal constraints and high
food inflation, if there was a trade-off between allocating resources for welfare
schemes and increasing investments with a view to raise farm wages, could the
money spent on MGNREGA (more than Rs 2 lakh crore) not be better used if it was
for investment in say rural-urban construction, or for overall growth, or for agrigrowth?
These investments would have raised the growth rates in these sectors, and
thereby 'pulled' the real farm wages through a natural process of development,
whereby wages increase broadly in line with rising labour productivity.

Within the 2000s, GDP (Construction) grew at a high rate
of 10.7 percent per annum in the first half which then slowed down marginally to 7.2
percent in the latter half. This contrasts with the negative growth in farm wages in
the first half of 2000s and high growth in latter half of 2000s, and casts doubts
whether this is the deciding factor in Indian case with respect to farm wages or is
there a long lag between growth in construction sector and rise in farm wages? Interestingly,
Odisha has the lowest rate of growth of construction sector in 2000s but has shown a
high growth of farm wages. Again, Gujarat (during the entire period) and Haryana (in
2000s) have shown high rates of growth of construction activity but show low increase
in real wage rates.

The period 1992-93 to 1996-97 (corresponding to the Eighth Plan) showed a
rate of average annual growth of 4.8 percent per annum-highest plan growth
experienced ever in India in agri-GDP. But this growth decelerated to almost half for
the next ten years – 2.5 percent in the Ninth Plan (1997-98 to 2001-02) and 2.4
percent in Tenth Plan (2002-03 to 2006-07). Incidentally this deceleration coincided with a downturn in world prices in the wake
of East Asian Crisis in 1997, which touched a trough around 2001-02, followed by a
slow recovery in global agri-prices from 2003 to 2005 (Gulati, 2011). This may have
led to depressed farm incomes and thereby slow or even negative growth in real
farm wages. MGNREGA is also significant with 10 percent increase in employment generated
leading to around 0.3 – 0.5 percent increase in farm wages. The empirical results
clearly show that the impact of growth variables on real farm wages is much greater
than MGNREGA.

Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)
Performance

Indicator	2008-09	2009-10	2010-11	2011-12
No. of households (in crore)	4.5	5.3	5.5	5.0
Average persondays per employed household	48	54	47	42
Expenditure (In ₹ crore)	27,250	37,905	39,377	37,303
Wages as % of total expenditure	67	70	68	70
Average wage per day (In ₹)	84	90	100	101

1. The share of productive work in the scheme is decreasing over the years. In 2006-07, water conservation, land development and irrigation works accounted for ~75% of the work done. In 2009-10, these heads accounted for only 54%.
2. Interstate comparison: NSSO data (2009-10) suggests that Rajasthan, TN and HP are states where scheme is working well and the participation rate (% of people who got work to those who wanted but didn't get) is > 80%. Participation of women, SC, ST is nearly half the total workers. Poorer states have higher demand for work under NREGS but most of it remains unmet due to administrative inefficiency. If we plot share of states in rural BPL households vs the share of states in man days of work generated under NERGA we find that among the poor states UP, Bihar, Odisha lag behind a lot while Rajasthan has done exceptionally well. Among the richer states, Maharashtra and AP stand out in their implementation. Rajasthan also performed well in terms of number of days of work provided to those who got work (76) followed by NE states (except Assam and ~60) followed by MP, Chattisgarh, UP and Andhra (~50). AP has been able to create an effective system due to good IT infrastructure, Rajasthan due to active drought relief work and involvement of NGOs. In Kerala it revolves around the women SHG model based Kudumbashree. Jharkhand faced problems due to absence of PRIs.
3. Work created: MGNREGA has directly led to the creation of 1000 crore person-days of work since its inception in 2006-07. In financial year 2010-11, MGNREGA provided employment to 5.5 crore households (25% of rural population) generating 250 crore person-days. In 2008-09, it employed 4.5 cr households and created 215 cr man days of work. In 2006-07 it employed 2 cr households and generated 90 cr man days of work.
4. Wages: Studies showed that before 80s, real wages were almost stagnant and in most cases were below minimum wages. Between 1983 and 1993-94 daily real wages grew @ 3.3% p.a. while between 1993-94 to 2004-05 they grew @ 2.3% p.a. only. Between 1999-00 to 2004-05 the rise was 0.6% only. The inequalities between male and female rates has been rising. During the period 2007-10, the average cumulative real farm wage rates increased by 16.0% at the all India level and since the launch of the scheme in 2006-07 . The growth was the fastest in Andhra Pradesh (42%) and Odisha (33%), Bihar (19%) and Uttar Pradesh (20%). NREGA wages were Rs. 65 in 2006-07, 75 in 2007-08, 84 in 2008-09 and 88 in 2009-10 showing an increase of ~35% in nominal terms.

5. Work completed: Works completed to total works taken up was 47% in 2006-07 (4 lakh out of 8.25 lakh) and has since declined to 25% in 2009-10 (6 lakh out of 25 lakh). The decline and the consequent low rate is due to lack of dedicated staff, lack of technical expertise. One way to ensure this is to fix a certain proportion of total funds to be spent on professional support at the ground level. Block cluster level technical support teams could be appointed. Government should seriously consider a one year diploma course on NREGA.
6. Employment guarantee: National average is 48 days work per household. It is relevant to ask whether a relatively low provision of work reflects lack of demand or is it ineffectiveness in being able to meet the demand. In certain states, the low number of days of work is almost certainly a reflection of the universalization of the programme to the whole country which led to the inclusion of districts where the demand for MGNREGA work is low (Kerala and Punjab). But there are many states where demand was expected to be high but which have not performed well, such as the high out-migration states of Odisha and Bihar, as also states, such as Uttarakhand and Karnataka, which appear to have not given the due attention to energizing MGNREGA.

CAG Findings

- Analysis of data related to the performance of the Scheme showed that there has been significant decline in per rural household employment generation in the last two years. The per rural household employment, declined from 54 days in 2009-10 to 43 days in 2011-12. There was also a substantial decline in the proportion of works completed in 2011-12. It was also seen that Bihar, Maharashtra and Uttar Pradesh, which together account for 46 *per cent* of the rural poor, utilised only about 20 *per cent* of the Central Scheme funds. This
- As per section 16(3) of the Act, gram panchayats were required to prepare the annual development plan on the basis of recommendations of the gram sabha. In 1,201 GPs (31 *per cent* of all test checked GPs) in 11 states and one UT, annual plans were either not prepared, or were prepared in an incomplete manner.
- Audit observed that Information, Education and Communication (IEC) plans were not formulated in 12 states and two UTs. Shortfalls in utilization of IEC funds were also noticed. In a demand driven scheme like MGNREGS, awareness of beneficiary rights would be a critical factor in its success. The low level of IEC activities would have an adverse effect on
- Monitoring at the Central level was unsatisfactory. The Central Council could not fulfil its statutory mandate of establishing a central evaluation and monitoring system even after six years of its existence. The only monitoring activity carried out was in the form of 13 *ad-hoc* field visits to six states by the Council members. No follow up action was taken on these visits by the Council.

Summary of Recommendations

- ***The widespread shortage of staff at all levels, adversely affects the implementation of the Scheme. The staff position should be closely monitored by the Ministry and shortfall on this account should be taken up with the state governments.***
- ***MGNREGS, being a demand driven programme, requires the beneficiaries to be aware of their rights. However, the shortfall in IEC expenditure and non-formulation of IEC plans indicated gaps in the creation of awareness among beneficiaries. IEC activities need to be stepped up for better beneficiary awareness.***
- ***In the interest of uniformity and for easier consolidation of accounts, the Ministry may consider developing a model format of accounts.***
- ***Non-payment of unemployment allowance and non-maintenance of essential records were noticed by Audit across all states. A possible reason for non-payment of unemployment allowance could be the non-sharing of unemployment allowance by Central Government and the perceived burden on the state exchequer. In order to safeguard the interests of the beneficiaries, the Ministry may consider partial reimbursement of unemployment allowance. Further, strict action may be taken***

against erring officials when any case of non-payment of unemployment allowance is noticed.

- *The Ministry may monitor the maintenance of the prescribed wage material ratio strictly. State governments may be asked to make good, the amounts spent in excess of 60:40 ratio.*
- *The absence of physical records and their incorrect maintenance at the GP level makes verification of the achievements of the Scheme an extremely difficult task; it also increases the risk of mis-appropriation of funds. Record maintenance at GP level needs to be streamlined. Record maintenance should be monitored closely at all levels and fund release should be linked to proper maintenance of records.*
- *The CEGC and the Ministry need to ensure intensive monitoring of the Scheme for its proper implementation. They need to design a system for verification and audit of work.*
- *The Ministry or CEGC may consider undertaking a national level, comprehensive, independent evaluation of the Scheme.*
- *The Ministry should examine and reconcile the deficiencies in software design and make necessary changes to the NREGASoft. There is a need to put in place stricter controls for data modification after authentication and closure of data entry.*

NREGA 2.0

1. Migrate from unskilled to skilled. Person getting 100 days will next be provided training under NRLM.
2. Transfer of funds to PRIs. MoRD will transfer 1% of its budget of $20 bio to PRIs for their capacity building and training.
3. NREGA wages will be aligned to minimum wages.
4. Special funds for rural sanitation. For every toilet built, 45% of estimated cost will go from NREGA.
5. Annual CAG audit of utilization of funds. A district panel of CAs will audit the accounts of each panchayat.

Challenges

1. The technical capacity at the local level has to be significantly enhanced. This is in regard to planning, design and quality of works, as well as of their maintenance. There is a clear case for establishing a pool of local 'barefoot' engineers/technical assistants who could be trained up.
2. Delays in wage payments have emerged as the most frequently heard complaint under MGNREGA. NSSO 2009-10 reveals only 70% in AP, 10% in Rajasthan and 25% in MP got wages within 15 days. The major reason for delay is that measurements of work are not being made on time, mainly due to lack of adequate technical staff at the block level. There are also bottlenecks in the flow of funds through the system, at times because data on the Management Information System (MIS) is not being filled up on time. Better use of information technology is needed. This issue if not resolved can lead to the failure of entire scheme.
3. There is a need to involve NGOs who could support gram panchayats in planning, implementing and conducting of social audits of MGNREGA works.
4. Thought must be given as to how the MGNREGA in conjunction with the NRLM programme can help rural artisans.

Q. Analyze the impact of MNREGA on rural and urban wages and rural migration. (2011, II, 20)

Q. Make a critical assessment of the National Rural Employment Guarantee Scheme of India. (2007, II, 60)

National Rural Livelihood Mission (NRLM)

CHANGES TO NATIONAL RURAL LIVELIHOODS MISSION (AAJEEVIKA)

- In a major boost to the roll out of the women's self help group model across the country, the Union Cabinet has cleared important changes to the National Rural Livelihoods Mission (Aajeevika)..
- The key changes approved are as follows:

1. IMPROVED TARGETING, BY DOING AWAY WITH BPL CRITERIA AND INSTEAD IDENTIFYING TARGET GROUPS THROUGH THE PARTICIPATORY IDENTIFICATION OF POOR (PIP) PROCESS.

- Under the existing framework of implementation of N.R.L.M, only rural households included in the official BPL list could be targeted under N.R.L.M. This list was prepared in 2002, has not been updated and has many defects. Since the entire N.R.L.M scheme depends on the formation of affinity based groups of poor women with common bonding and synergistic functioning, which cannot be created by simply drawing persons from an externally prepared and incomplete BPL list, the Cabinet has now approved the that target groups under N.R.L.M will be determined by a well defined, transparent and equitable process of Participatory Identification of Poor (PIP), at the level of the community. The P.I.P process has been extensively demonstrated to be very effectives in states where women's self-help-groups have succeeded. The list finalized through the P.I.P process will be vetted by the Gram Sabha and approved by the Gram Panchayat. The P.I.P process will also have a set of exclusion criteria, automatic inclusion criteria and a set of deprivation indicators for enabling poverty ranking in a participatory manner. This delinks N.R.L.M target group from the BPL list.

2. INTEREST SUBVENTION AND ADDITIONAL INTEREST SUBVENTION IN 150 DISTRICTS.

- Pursuant to the announcement made by the Finance Minister in the Budget Speech for 2012-13, Cabinet has approved the provision of interest subvention to Women SHGs, enabling them to avail loans up to Rs. 3 lakh at an interest rate of 7 per cent per annum. Women SHGs that repay loans in time will get additional 3 per cent subvention, reducing the effective rate to 4 per cent. The initiative, in the first phase, would focus on 150 districts, including the 82 IAP districts, affected by Left Wing Extremism.

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3. CHANGE IN THE PATTERN OF FINANCIAL ASSISTANCE - REPLACING CAPITAL SUBSIDY WITH A COMMUNITY INVESTMENT SUPPORT FUND.

- Financial assistance to the poor households was so far provided in the form of capital subsidy linked to bank credit. It was felt that this did not create a perpetual and viable capital base at the S.H.G level and was open to misuse. The Cabinet has thus approved to withdraw 'capital subsidy' to S.H.Gs and instead provide financial support S.H.G federations and livelihoods organizations of the S.H.G members in the 'intensive' blocks through a grant called Community Investment Support fund, which will be used by the Federations to advance loans to S.H.Gs and to undertake common socio-economic activities. This will happen in a phased manner, since intensive blocks will be added in a phased manner.

4. SETTING UP OF NATIONAL LEVEL SOCIETY UNDER N.R.L.M FOR MORE EFFECTIVE IMPLEMENTATION.

- The Cabinet also approved the setting up an 'autonomous, adequately staffed, professionally managed and empowered agency at the national level to implement the N.R.L.M', called the National Rural Livelihoods Promotion Society (N.R.L.P.S) under the Societies Registration Act. The NRLPS will act as the technical support unit of N.R.L.M. The setting up of such a Society is essential to implement the programme in a mission mode, as livelihoods programmes require a wide range of specialization and experience. The main objective of the Society is to continuously build capacities of the State rural livelihoods missions in planning, implementing and monitoring the programme. The Society structure would enable access to high quality professional support, provide flexibility to create partnerships and facilitate innovations and would serve as a knowledge center for rural livelihoods for the state missions. Further it will provide an opportunity for formally involving State Governments in decision-making, by nominating them to the Executive Committee of the Society.

1. It is a successor to SGSY and will be fully based on SHGs. It will organize and train poor people into SHGs. Once the training is imparted, it will develop forward and backward linkages and give them loans to start their own enterprises.
2. The beneficiaries will be chosen by the gram panchayat. But it is to be ensured that one woman of each poor household is included. Focus will be on women, SC and STs.
3. Currently 30 mm women are part of it and by 2017 its target is to make the women in every poor household its part and to take its membership to 70 mm women. Currently southern states account for 70% of women SHGs and 80% of the credit flow.

Inequality

Rajan Committee Report

The methodology developed by the Committee first allocates funds across states based on need, in line with recommendations of previous committees. Need is based on a simple index of (under) development. The index proposed here is an average of the following ten sub-components: (i) monthly per capita consumption expenditure, (ii) education, (iii) health, (iv) household amenities, (v) poverty rate, (vi) female literacy, (vii) percent of SC-ST iv population, (viii) urbanization rate, (viii) financial inclusion, and (x) connectivity. Less developed states rank higher on the index, and would get larger allocations based on the need criteria.

The Committee proposes allocations based on the index, but with allocations increasing more than linearly to the most underdeveloped states.

Importantly, since the index is based on publicly available data, there is no element of discretion in the allocations.

To allocate more to underdeveloped states with large areas but small population, the Committee decided to assign 80 percent weight to a state's share in population and 20 percent to the state's share in area in determining the factor by which to multiply need.

This report however, also takes a step forward in trying to draw a balance between "needs" and "performance". Given that poor administration or weak institutions in a recipient state can fritter away allocated resources to the detriment of the population, there should be some recognition for effective governance and the efficiency of resource use.

Finally, all states require a basic minimum to meet fixed expenditures such as administrative costs. Because states with small populations and areas are unlikely to meet that minimum threshold, the Committee recommends that each state get a fixed basic allocation of 0.3 percent of overall funds, to which will be added its share stemming from need and performance to get its overall share. The shares range from 0.30percent to 16.41 percent

In sum, given there are 28 states included for the construction of index, 8.4% of funds will be allocated as a fixed basic allocation. Of the remaining 91.6%, we choose parameters such that 3/4th of it is allocated based on need and 1/4thbased on performance.

, the formula rewards underdeveloped states more for an improvement in the index.

The Central Government may want to offer additional forms of support to states that are particularly underdeveloped. We deem states that score 0.6 and above on our (under)development index "least developed" states. States that score below 0.6 and above 0.4 are "less developed" states, while states that score below 0.4 are "relatively developed" states. The 10 "least developed" states that currently score above 0.6 could, for instance, be targeted for additional assistance.

ii) The Committee recommends that the proposed underdevelopment index be updated on a quinquennial basis and performance be measured relative to the last update.
(iii) The Committee recommends that the index and the allocation formula be reexamined after 10 years and revisions proposed based on experience.

One concern with per capita income at the state level is that it may not adequately measure what reaches the people. Resource rich states may have high levels of average income, which is likely to be appropriated by resource-extracting corporations that may or may not be owned in the state. As a result, average consumption at the household level may still be low. Conversely, states with many emigrants may see inflows from remittances that tend to raise average consumption, even if average state incomes are low

Another reason for using income is that it could represent greater capacity of the state to raise and utilize resources from its own people, for example through state taxes and

household savings. However, household savings may be invested outside the state rather than internally, limiting the resources the state has for development.

A second variable that was debated was the fraction of people belonging to scheduled castes or scheduled tribes (SC/ST) in state population. Some on the committee believed that unlike the other variables, this was not an "outcome" variable. The majority of the committee, however, felt that it reflected groups that had been historically deprived, and even today may indicate social deprivation if not economic deprivation.

We therefore propose
to allocate in proportion to the index. However, we will square the index so that truly needy states get disproportionately more, while more developed states get less. In other words, our methodology introduces non-linearity, though not in an extreme form as categorization does.

Population and Area
The squared underdevelopment index represents the need of an average individual in a state. To get the allocation for a state, normally we should multiply by the state's share in population. There is, however, an argument for allocating more to underdeveloped states with large areas but little population. A road costs the same whether it connects a village of 25 inhabitants or 5000 inhabitants. Similarly, there are fixed costs of building schools or dispensaries, but these have to be near people to be of use. Therefore, underdeveloped states with small populations and large areas will have the burden of creating significantly more infrastructure per capita. To address this, the Committee decided to assign 80 percent of weight to a state's share in population and 20 percent to the state's share in area for determining the factor by which to multiply need. T

Importantly, the committee decided
that a change in the fraction of SC/ST population was not a meaningful measure of performance, and therefore this variable was dropped while computing the performance index

Points to state i based on need are:

$$[0.8 * Share\ of\ Population\ of\ State\ i + 0.2 * Share\ of\ Area\ of\ State\ i] * [(under)\ development\ index\ for\ state\ i\ ]^2$$

Points to state i based on performance are:

$$Points\ to\ state\ i\ based\ on\ need * Change\ in\ (under)\ development\ index\ for\ state\ i * Performance\ weighting\ parameter$$

$$Percent\ share\ of\ state\ i\ in\ the\ total\ central\ government\ funds\ allocated = 0.3\% + Percent\ share\ of\ state\ i\ based\ on\ need + Percent\ share\ of\ state\ i\ based\ on\ performance$$

for each state (for a total pool of Rs. 1000 crore). Note that the allocation to larger States decline on per capita basis while the smaller States no longer seem disfavored.

Note that one interesting feature of the formula is that the incremental reward for performance is increasing in the level of underdevelopment – this is because the reward for performance is multiplied by need. In other words, the formula rewards underdeveloped states more for an improvement in the index, a necessary feature in the formula since the most underdeveloped states tend to lose more allocations as they develop.

Special Category States

The National Development Council (NDC) has accorded the status of Special Category State (SCS) to eleven (out of twenty-eight States) which have been characterized by a number of features necessitating special consideration. These features include: (i) hilly and difficult terrain, (ii) low population density and/or sizeable share of tribal population, (iii) strategic location along borders with neighbouring countries, (iv) economic and infrastructural backwardness, and (v) non-viable nature of state finances. States under this

Appendix 1. Underdevelopment Index

The underdevelopment index the Committee proposes includes the following ten sub-components: (i) monthly per capita consumption expenditure, (ii) education, (iii) health, (iv) household amenities, (v) poverty rate, (vi) female literacy, (vii) percent of SC-ST population, (viii) urbanization rate, (viii) financial inclusion, and (x) connectivity. Table A1 provides a list of all the variables and the sources.

Income is proxied for by per capita consumption expenditure from the Consumption Expenditure Surveys of the National Sample Survey Organisation (NSSO), and is averaged

The "education" sub-index is computed as a weighted average of (i) attendance ratio and, (ii) number of institutions for primary and secondary education per 1000 of state population in the age groups of 5-14 years. Attendance ratio is calculated for age categories 5-14, 15-19, and 20-24 years using NSSO's data from the Employment and Unemployment Surveys, and is measured as the fraction of a particular cohort that reports attending an educational institute.

The "health" sub-index is measured by a single indicator – infant mortality rate. This is

[3] Infant mortality is the primary health indicator for four reasons. First, data on infant mortality are available and are more reliable than other indicators, such as life expectancy, child mortality and maternal mortality. Second, infant mortality is more sensitive than other indicators like life expectancy to changes in economic conditions, and is considered to be a flash indicator of the health conditions of the poor (Boone, 1996). Third, reductions in infant and child mortality largely explain the substantial improvements in life expectancy over the last fifty years in developing countries (Cutler et al., 2006). Finally, past studies indicate that in developing countries, infant mortality depends on access to medicines and health facilities, water and sanitation, fertility patterns, maternal

The sub-index for "household amenities" is a weighted average of the number of households which have the following (i) electricity as primary source of lighting, (ii) access to drinking water within premises, (iii) no sanitation facilities within premises, (iv) mobile/phone facilities, (v) no specified assets.[4]

Poverty ratios used in the Report have been taken from Planning Commission and are based on the definition being currently used by the Planning Commission. It can be suitably altered when a new definition of the poverty line is proposed.

Female literacy, percent of SC-ST population, and urbanization rate are from the census abstracts. In addition to economic and social outcomes, we also include an indicator of

abstracts. In addition to economic and social outcomes, we also include an indicator of financial development, which is the number of households availing banking services.

Finally, we include a sub-index of connectivity – which is a weighted average of a number of indicators -- length of surfaced national and state highways, other surface road and rail route per 100 sq. km. The sub-index will be increasing in these measures. Connectivity could also

As per the list, Odisha, Bihar, MP, Chhattisgarh, Jharkhand, Arunachal Pradesh, Assam, Meghalaya, Uttar Pradesh and Rajasthan come under the least developed category. Under the less developed category come Manipur, West Bengal, Nagaland, Andhra Pradesh, Jammu and Kashmir. Mizoram, Gujarat, Tripura, Karnataka, Sikkim and Himachal Pradesh. In the list of relatively developed states come Haryana, Uttarakhand, Maharashtra, Punjab, Tamil Nadu, Kerala and Goa.

Q. Examine critically the economic reforms underway since 1991 with reference to their effect on inequality, poverty reduction and vulnerability to external shocks. (2009, II, 60)

Q. Explore the nature of tax reforms India needs to ensure "inclusive growth", spelling out their basic components as you see them. (2009, II, 60)

Misc

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Nuclear Reactor Types

PHWR

A **pressurised heavy water reactor** (PHWR) is a nuclear power reactor, commonly using unenriched natural uranium as its fuel, that uses heavy water (deuterium oxide D_2O) as its coolant and moderator. The heavy water coolant is kept under pressure, allowing it to be heated to higher temperatures without boiling, much as in a PWR. While heavy water is significantly more expensive than ordinary light water, it yields greatly enhanced neutron economy, allowing the reactor to operate without fuel enrichment facilities(mitigating the additional capital cost of the heavy water) a

Natural uranium consists of a mixture of various isotopes, primarily ^{238}U and a much smaller amount (about 0.72% by weight) of ^{235}U. ^{238}U can only be fissioned by neutrons that are fairly energetic, about 1 MeV or above. No amount of ^{238}U can be made "critical", however, since it will tend to parasitically absorb more neutrons than it releases by the fission process. ^{235}U, on the other hand, can support a self-sustained chain reaction, but due to the low natural abundance of ^{235}U, natural uranium cannot achieve criticality by itself.

The "trick" to making a working reactor is to slow some of the neutrons to the point where their probability of causing nuclear fission in ^{235}U increases to a level that permits a sustained chain reaction in the uranium as a whole. This requires the use of a neutron moderator, which absorbs some of the neutrons' kinetic energy, slowing them down to an energy comparable to the thermal energy of the moderator nuclei themselves (leading to the terminology of "thermal neutrons" and "thermal reactors"). During this slowing-down process it is beneficial to physically separate the neutrons from the uranium, since ^{238}U nuclei have an enormous parasitic affinity for neutrons in this intermediate energy range (a reaction known as "resonance" absorption). This is a fundamental reason for designing reactors with discrete solid fuel separated by moderator, rather than employing a more homogeneous mixture of the two materials.
Water makes an excellent moderator; the hydrogen atoms in the water molecules are very close in mass to a single neutron, and the collisions thus have a very efficient momentum transfer, similar conceptually to the collision of two billiard balls. However, in addition to being a good moderator, water is also fairly effective at absorbing neutrons. Using water as a moderator will absorb enough neutrons that there will be too few left over to react with the small amount of ^{235}U in the fuel, again precluding criticality in natural uranium. Instead, light water reactors first enhance the amount of ^{235}U in the uranium, producing enriched uranium, which generally contains between 3% and 5% ^{235}U by weight (the waste from this process is known as depleted uranium, consisting primarily of ^{238}U). In this enriched form there *is* enough ^{235}U to react with the water-moderated neutrons to maintain criticality

One complication of this approach is the requirement to build a uranium enrichment facility, which are generally expensive to build and operate. They also present a nuclear proliferation concern; the same systems used to enrich the ^{235}U can also be used to produce much more "pure" weapons-grade material (90% or more ^{235}U), suitable for producing a nuclear bomb. This is not a trivial exercise by any means, but feasible enough that enrichment facilities present a significant nuclear proliferation risk.

An alternative solution to the problem is to use a moderator that does *not* absorb neutrons as readily as water. In this case potentially all of the neutrons being released can be moderated and used in reactions with the ^{235}U, in which case there *is* enough ^{235}U in natural uranium to sustain criticality. One such moderator is heavy water, or deuterium-oxide.

VVER (Vodo-Vodyanoi Energetichesky Reactor)

Reactor fuel rods are fully immersed in water kept at 15 MPa of pressure so that it does not boil at normal (220 to over 300 °C) operating temperatures. Water in the reactor serves both as a coolant and a moderator which is an important safety feature. Should coolant circulation fail the neutron moderation effect of the water diminishes, reducing reaction intensity and compensating for loss of cooling, a condition known as negative void coefficient. Later versions of the reactors are encased in massive steel pressure shells. Fuel is low enriched (ca. 2.4–4.4% ^{235}U) uranium dioxide (UO_2) or equivalent pressed into pellets and assembled into fuel rods.

Primary Cooling Circuit

As stated above, water in the primary circuit is kept under constant pressure to avoid boiling. Since the water transfers all the heat from the core and is irradiated, integrity of this circuit is most crucial. In the circuit four subsystems can be distinguished:

1. Reactor: Water flows through fuel rod assemblies and is heated by the nuclear chain reaction.
2. Volume compensator: To keep the water under constant but controlled pressure, the volume compensator regulates pressure employing self-regulation of saturated steam-water interface and by means of electrical heating and relief valves.
3. Steam Generator: In the steam generator, heat from primary coolant water is used to boil water in the secondary circuit.
4. Pump: The pump ensures proper circulation of the water through the circuit.

To ensure safety primary components are redundant.

Secondary Cooling Circuit

The secondary circuit also consists of different subsystems:

1. Steam Generator: Secondary water is boiled taking heat from the primary circuit. Before entering the turbine remaining water is separated from the steam so that the steam is dry.
2. Turbine: The expanding steam drives a turbine, which connects to an electrical generator. The turbine is split into high and low pressure sections. To prevent condensation (Water droplets at high speed damage the turbine blades) steam is reheated between these sections. Reactors of the VVER-1000 type deliver 1 GW of electrical power.
3. Condenser: The steam is cooled and allowed to condense, shedding waste heat into a cooling circuit.
4. Deaerator: Removes gases from the coolant.
5. Pump: The circulation pumps are each driven by their own small steam turbine.

To increase efficiency of the process, steam from the turbine is taken to reheat coolant before the deaerator and the steam generator. Water in this circuit is not supposed to be radioactive.

Passive heat removal system

A passive heat removal system has been added to the existing active systems in the AES-92 version of the VVER-1000 used for the Koodankulam Nuclear Power Plant in India. This has been retained for the newer VVER-1200 and future designs. The system is based on a cooling system and water tanks built on top of the containment dome.[13]The passive systems all safety functions for 24 hours, and core safety for 72 hours.[4]

EPR

The reactor can use 5% enriched uranium oxide fuel, reprocessed uranium fuel and 100% mixed uranium plutonium oxide fuel.

The EPR design has several active and passive protection measures against accidents:

- Four independent emergency cooling systems, providing the required cooling of the decay heat that continues for 1 to 3 years after the reactor's initial

shutdown (i.e. 300% redundancy)
- Leaktight containment around the reactor
- An extra container and cooling area if a molten core manages to escape the reactor (see containment building)
- Two-layer concrete wall with total thickness 2.6 meters, designed to withstand impact by aeroplanes and internal overpressure

CAG Jurisdiction

The CAG's role should be viewed in the context of our constitutional scheme under which the executive is accountable to Parliament. CAG is an essential instrument for enforcing the accountability mechanism as the CAG's reports on government's stewardship of public finance are required to be placed in Parliament and state legislatures under Article 151 of the Constitution. To enable him to discharge this responsibility, without fear or favour, he has been given an independent status under Article 148 analogous to that of a Supreme Court judge.

In India we have adopted the British system of parliamentary democracy. Britain had to undergo centuries of struggle to secure Parliament's supremacy over the executive (monarchy), dating back to Magna Carta (1215) and Bill of Rights (1688) and measures such as enactment of the Exchequer and the Audit Act of 1866, which created an independent office of CAG, who would audit all government departments and make a report to Parliament to be examined by its Public Accounts Committee (PAC). In order to strengthen parliamentary control, the UK Audit Act was amended in 1983 and the CAG made an Officer of the House of Commons and legal backing given to him for conducting economy, efficiency and effectiveness audit.During the 1990s, all the advanced Commonwealth countries such as Australia and New Zealand amended their audit acts and made provision similar to that of the UK, and made the CAG an officer of Parliament with powers to conduct an efficiency audit of government operations. The US Government Accountability Office since its inception has been recognised as a legislative branch agency and reports on a wide variety of subjects from federal fiscal issues and debt control to aviation security, gun control and counterterrorism matters. In continental countries such as France, Germany, Italy, Austria and Belgium, there is a system of audit courts, which while performing functions of expenditure control on behalf of Parliament, enjoy wide powers and act like judicial bodies. The French Cour des Comptes is assisted by the prosecutor general responsible for providing legal advice, and has power to recover improperly expended public funds or cash deficits from defaulting officers.

Most democratic countries have a statutory provision of securing Parliament's consent for appointment of the head of the supreme audit institution (SAI). Not only Commonwealth countries such as UK, Canada and New Zealand, but countries with such diverse political systems as the US, Germany, Japan, South Korea, South Africa and Thailand have this requirement and the appointment of head of SAI is ratified by their legislature. This is in recognition of the fact that SAIs have to do very delicate work, while commenting on deeds and misdeeds of the government, a task which they can perform effectively only when they are given not only independence from the executive but parliamentary backing as well.

Gadgil Formula

1. Special Category states were given preference. Their needs should first be met out of the total pool of Central assistance.
2. The remaining balance of the Central assistance should be distributed among the remaining States on the basis of the following criteria:

- 60 per cent on the basis of population;
- 10 per cent on the basis of tax effort, determined on the basis of individual State's per capita tax receipts as percentage of the State's per capita income;
- 10 per cent on the basis of per capita State income, assistance going only to States whose per capita incomes are below the national average;
- 10 per cent on the basis of spill-over of major continuing irrigation and power projects;
- 10 per cent for special problems of individual States.

Reasoning behind the given weights:

i. Population

In a country like India population acts as an apt measure to represent the requirements of the people because a major portion of the population lives below the poverty line. This proposition was also supported by the empirical data which showed a negative correlation between population of states and their per capita income.

ii. Tax effort

This is an important factor to measure the potential of the state as far as its own resources are concerned. This relative measure incentivizes the states to undertake measures to increase their own potential through various tax measures.

iii. State per capita income

A problem regarding unequal development amongst the states was faced in the earlier plans because of larger states with their large plans were able to get a larger share of resources from the centre. This led to increased inequalities amongst the states. Therefore, to make the distribution fairer to the smaller states with a lesser than national per capita average income were given extra share in the resources.

iv. Special Problems

This factor was introduced so as to provide enough resources to states to overcome problems like droughts, famines etc. In the absence of this share, such states would have suffered huge losses because of these problems and the implementation of their plans could have been hindered. This was a discretionary element in the formula which required proper scrutiny of the states situation by the Finance Commission.

v. Irrigation and power projects

These projects have been in the process of implementation before the fourth plan was formulated. They needed extra resources for the successful completion of these projects.

Modified Gadgil Formula

The formula was modified on the eve of the formulation of the Sixth Plan. The 10 percent indicator for ongoing power and irrigation projects was dropped and the share of per capita income was increased to 20 percent, to be distributed to those states whose per capita incomes were below the national average.

Gadgil-Mukerjee formula

Criteria	Weight (%)
Population	55
Per Capita Income	25
Fiscal Management	5
Special Problems	15
Total	100

PDS (Khera and Dreze)

1. TN has a universal PDS where every household is entitled to 20 kg rice per month. Other states like AP, HP, Kerala, Chattisgarh, Rajasthan, Odisha too are moving towards a universal PDS. Universal PDS not only avoids costly exclusion errors but also improves functioning since there is more public pressure to perform. The performance pressure has only increased following the growing divergence between the PDS prices and market prices.

2. Between 204-05 and 2009-10, the quantity of wheat and rice purchased per household from PDS has gone up by 50%. The proportion of households purchasing at least some rice and wheat has gone up from 27% in 2004-05 to 45% in 2009-10. The PDS subsidy is equivalent to Rs. 250 p.m. which is significant for poor households.
3. PDS overall has reduced the Tendulkar poverty gap by 18% in 2009-10 but the performance of TN is 50% reduction AP + Chattisgarh (40% each), HP and Kerala (35% each). Rajasthan has moved towards a universal PDS only after 2009-10. In states which cling to TPDS (UP, Bengal, MP, Jharkhand, Bihar), PDS's impact has only been < 15%.
4. PDS also has stabilizing impact on poor by providing credible security, improves nutritional outcomes (specially when other commodities are included in PDS_.

National Income

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Accounting

1. GDP factor cost or GDP income method = wages + rent + profit + interest.
2. GDP expenditure method or GDP output method or GDP producer prices = C + I + G + NX.
3. GDP factor cost + indirect taxes - subsidies = GDP producer prices.

Overall Economy

Highlights: Economic Outlook 2013-14

Dr. C. Rangarajan, Chairman, Economic Advisory Council to the Prime Minister released the document 'Economic Outlook 2013-14' at a Press Conference in New Delhi today. Following are the highlights of the document:

Ø Economy to grow at 5.3% in 2013-14

· Agriculture projected to grow at 4.8% in 2013-14 as against 1.9% in 2012-13. The early and good monsoon had a huge positive impact on sowing activity. The reservoir position in the week ending August 29, 2013, was 29 per cent better than the average of the last 10 years. Thus both kharif and rabi crops are expected to be good.

· Industry (including manufacturing, mining and quarrying, electricity, gas, water supply and construction)projected to grow at 2.7% in 2013-14 as against 2.1% in 2012-13. Manufacturing sector projected to grow at 1.5% in 2013-14 as against 1 % in 2012-13.

· Services projected to grow at 6.6%in 2013-14 as against 7.1% in 2012-13.

· The Council expects the growth rate in 2013-14 to be higher than it was in 2012-13. Apart from the substantially improved performance of agriculture, the other sectors of the economy will also perform better in the second half of 2013-14 for three reasons

o The full impact of various measures taken over the last six months will be reflected later in this year

o Strong emphasis is being laid on improving the performance of key infrastructure sectors that lie in the public domain such as coal, power, roads and railways

o Continuous efforts are being made to remove the bottlenecks in the implementation of projects

Ø Structural Factors

· Domestic savings rate decline of 6% between 2007-08 and 2011-12 almost entirely on account of a decline of 3.7% in public sector savings and 2.2% in private corporate savings.

· Decline in net financial savings of households to 8 per cent in 2011-12 from 11-12 per cent in years prior to 2010-11.

· Investment rate projected at 34.7% of GDP in 2013-14 as against the estimated 35% in 2012-13.

· Domestic savings rate projected at 31% of GDP as against the estimated 30.2 % of GDP 2012-13.

Ø Domestic Inflation

· During 2013-14 the good performance in agriculture will have a moderating effect on food inflation, depreciation of the rupee may put some upward pressure. On balance, WPI inflation by end March 2014 will be around 5.5 percent as against the average of 7.4% in 2012-13 and 5.7% at end March 2013.

· Difference between WPI and CPI widening in recent months primarily on account of higher weightage of food items in CPI.

Ø External Sector: Controlling CAD remains main concern at present.

Current Account Deficit projected at $70 billion (3.8% of GDP) in 2013-14 against an estimated $88.2 billion (4.8% of GDP) in 2012-13.
o Merchandise trade deficit projected at $185 billion (10.1% of GDP) in 2013-14 against an estimated $195.7 billion (10.6% of the GDP) in 2012-13

o Net invisibles earnings projected at $115 billion (6.3 % of GDP) in 2013-14 against an estimated $107.5 billion (5.8 % of GDP) in 2012-13.

o Between 2010-11 and 2012-13, the combined impact of higher net oil and net gold imports on the CAD was almost $57 billion or 3.0 percentage points of GDP. This was equivalent to 87 per cent of the aggregate deterioration in the merchandise trade balance of $65 billion during the period.

o The CAD may go even below $ 70 billion in 2013-14 if the recent trends in exports and imports are maintained through the year.

· Net Capital flows projected at $ 61.4 billion(3.4% of GDP) in 2013-14 against an estimated $ 89.4 billion in 2012-13, the second highest level to date.

o Net FDI inflows in 2013-14 projected at $21.7 billion against an estimated $19.8 billion in 2012-13.

o Net FII inflows projected at $ 2.7 billion in 2013-14, even though data up to end of August shows a negative outflow. The commensurate figure is estimated at $ 17 billion in 2011-12 and $27 billion in 2012-13.

o Total inflows under the head of loans (ECBs and short-term loans)projected at $22 billion in 2013-14 as against an estimated $31.1 billion in 2012-13.

o Total banking capital inflows projected at $ 18 billion in 2013-14 against an estimated $ 16.6 billion in 2012-13.

· External Value of the Currency:

o EM currencies have sharply depreciated in 2013, especially since May (after the US Fed Chairman's statement). Those with large current account deficits, high inflation and weakening growth have depreciated the most.

o For India, the short-term problem is of financing the large CAD, while the medium term issue is to compress CAD to a more sustainable level of around 2.5% of GDP and ensure price stability.

o The Rupee at the current level is well corrected. Stability is returning to the foreign exchange market. As capital flows return and as CAD begins to fall, this tendency will strengthen.

Ø Fiscal Situation: Containing fiscal deficit within the budgeted estimate could be a challenge

· The Centre's budgeted fiscal deficit is estimated at 4.8% of GDP in 2013-14, as against an estimated 4.9% in 2012-13.

The fiscal deficit during the first four months of the current financial year has already reached 62.8 per cent, and expenditure on major subsidies 51.3 per cent, of the budgetary provision for the full financial year.
Discretionary expenditure budgeted may need to be compressed, and subsidies restructured, in the remaining months of the financial year in a growth friendly manner to limit fiscal slippages.

· The fiscal deficit of all states put together was 2.8 per cent of GDP in 2009-10, and moderated further to 2.1 per cent in 2012-13 (BE). A slow but steady growth of tax and non-tax receipts, as well as central transfers have helped in the process of fiscal consolidation in the states.

Ø Monetary Policy

· The current stance of monetary policy has to continue until stability in the rupee is achieved. Thereafter, if the current trend in the moderation of wholesale price inflation continues, which is in fact expected, the monetary authorities can switch to a policy of easing. The time frame for this is very difficult to specify.

Ø Measures Suggested to Improve Economic Conditions

I Growth friendly measures taken over the last year

· liberalizing FDI investment norms

· resolution of some tax issues of concern to industry

· fast tracking of public sector investment: focussed attention on coal, power, road, railways

· initiating construction on the dedicated freight corridor

· Cabinet Committee on Investments (CCI) set up to fast-track/debottleneck key projects: 209 projects (with an aggregate investment of Rs. 384,203 crore) cleared

· mid-course corrective measures to contain fiscal deficit

· improved investment policy regime across a number of sectors like sugar, urea, gas, roads, banking, etc.

· Accelerated parliamentary approval of pending bills

Recent Steps to Push Up Growth

Cabinet Committee on Investments

1. Decision on linear projects and gram sabha's consent requirement.
2. Directed coal ministry to give FSAs to 11 power projects worth Rs. 50,000 crores. This was made possible by the recent CCEA decision to allow coal price pass through. No FSA had been signed for the past 4 years.

The Rs. 115,000 crore Infrastructure Push

1. The PM directed various ministries to roll out PPP projects in the next 6 months of identified projects worth Rs 115,000 crore. These include the Mumbai Elevated Railway Corridor, two new locomotive projects, one expressway project between either Delhi and Jaipur or Delhi and Ludhiana, and two new ports, in West Bengal and Andhra Pradesh.
2. In civil aviation, these include two new international airports, at Bhubaneswar and Imphal; 50 new small airports by the Airports Authority of India, and eight new airports in PPP mode. Besides, airport operations and maintenance through PPP contracts will be introduced in AAI-run airports.
3. Panel of PC, MoF & railways to finalise report in two months on financing of Rs. 200,000 crore of stalled rail projects.

India's Civil Airplane Manufacturing Plan

1. It his expected to give a major boost to the domestic manufacturing.
2. It would largely be an indigenous effort though the engine would have to be purchased globally.
3. It would also rope in private sector.
4. It will be financed from the proposed National Investment Fund being created using the vast surplus of public sector units.

Nagraj (2013) on 2003-08 Boom

Factors Behind the 2003-08 Boom

1. World trade, dormant after the Asian financial crisis, turned around to grow at an unprecedented rate of 16.5% annually between 2003 and 2008 – against 3% per year in the previous six years.
2. US liberalized its rules for outsourcing contributing to the boom in the IT sector and back office sector in financial firms which India could take advantage of.
3. Capital flows increased tremendously largely due to easy credit conditions and booming trade. The investment-saving gap rose to 2.3% of GDP by 2008 – compared to less than 1% in 2003. Other policies such as allowing foreign flows in real estate, SEZ policy too fueled it.

Characteristics of the 2003-08 Boom

During the boom, the manufacturing and services sectors grew at about 10% annually, but growth was concentrated in a few industries and services; the output growth was largely based on the private corporate sector. Domestic savings mostly financed the investment boom, the bulk of which went into registered manufacturing, while infrastructure's share barely increased, despite avowed policy commitment to the contrary. The share of nonresidential construction expanded at the expense of residential construction. There was practically no economy-wide growth in employment; manufacturing employment contracted, mainly in labor-intensive industries.

1. Narrow base of output growth: Bulk of the incremental output came from a few narrowly defined industries and services, like the automotive industry, and telecoms and business services.
2. Private Corporate Boom: For the first time, the private corporate sector became the economy's investment engine - its investment rate going up from 12% to 17% of GDP.
3. Fall in unregistered manufacturing: While the share of registered manufacturing increased in the total GFCF, the share of unregistered manufacturing fell during the boom years.
4. Boom in real estate construction: During the boom, construction's share in total GFCF declined from 55.8% in 2003-04 to 52.5 in 2007-08, largely led by a fall in the share of residential construction. But non-residential construction's share went up by nearly 12 percentage points, to 58.4% in 2007-08, from 46.6% in 2001-02. This is an indicator of the real estate activity.
5. Stagnation in infrastructure creation: Despite the policy commitment, infrastructure's share in GFCF rose merely by 2 percentage points: from 20.2% in 2003-04 to 22.2% in 2007-08.
6. Labor Market: NSS shows that manufacturing employment declined by 3.7 million between 2004-05 and 2009-10, with women accounting for the bulk (84% or 3.1 million out of 3.7 million) of the job losses. Most of the job losses were in unregistered manufacturing. Registered (or factory) manufacturing showed an increase in employment (Goldar 2011). But unregistered manufacturing is more labor intensive and hence the overall fall in manufacturing jobs.
7. Credit fueled asset markets and consumption: During the boom, bank credit to the commercial sector went up at a rate much faster rate than the growth in fixed investment. In principle, one expects the credit flow to broadly mirror the pattern of fixed investment growth. But that does not seem to be the case, as credit seems to have grown disproportionately faster. So, where did the incremental credit go? Consumption and asset markets.
8. Composition of FDI: Rao and Dhar (2011) estimate that only about half of the capital inflow during this period can be called genuine FDI that could, in principle, bring in long-term capital with the potential of technical spillover. Nearly 40% of the inflow consisted of PE/VC/HF and portfolio investment that are essentially short-term funds. About 10% of the FDI represented "round tripping". This was due to easing of FDI norms (including reduction of threshold to be labeled as FDI from 40% stake to 10% only).

The Way Forward

1. Reviving public infrastructure investment seems a better bet as it would "crowd-in" private investment and demonstrate a policy commitment to growth – perhaps the most credible measure to win the confidence of all stakeholders.
2. The consequent rise in the fiscal deficit and inflation is likely to be self-liquidating in the medium term as aggregate supply improves.
3. A gradual aligning of domestic energy prices with international prices would eliminate the largest source of subsidies.
4. Food and consumer goods inflation could be kept in check by boosting bank credit to agriculture and small businesses, which were ignored during the boom.

Pre Independence vs Post Independence Growth

Economic Growth	Subramaniam	Maddison
A. 1900-01 to 1946-47		
Primary Sector	0.4	0.8
Secondary Sector	1.7	1.1
Tertiary Sector	1.7	0.8
National Income	1.0	0.8
Per capita income	0.2	0.04
B. 1950-51 to 2004-05		
Primary Sector	2.5	
Secondary Sector	5.3	
Tertiary Sector	5.4	
National Income	4.2	
Per capita income	2.1	

1980 as the Structural Divide
Statistics

1. GDP growth: 1950-51 to 1980-81: 3.5%, 1980-81 to 2004-05: 5.6%. GDP per capita growth: 1950-51 to 1980-81: 1.4%, 1980-81 to 2004-05: 3.6%.
2. Similarly labor productivity also fell till 80s, stagnated in first half of 80s and rebounded sharply ever since. Studies indicate that the contribution of TFPG in total growth rose from being negligible till 80s to ~60% since then.
3. There was also a sharp decline in the variation of growth from 80s.

1950-51 to 1980-81: How does India compare with rest of the world

1. Not as good as E Asia but not as bad as Africa. In fact it lied @ the world average. After 1980-81, only China has performed better.

Why economy took off in 1980s?

1. Expansionary fiscal policies: Fiscal deficit went up from around 5% in 70s to 9% in late 80s. Public debt had risen to 60% of GDP up from 30% in early 80s. (Ahluwalia, Tendulkar etc.) But it is not clear how can expansionary fiscal policy explain the rise in TFPG.
2. Arvind Subramaniam says there were 3 factors - (a) Attitudinal change in government signaling a shift in the favor of private sector. (b) These shifts and limited policy changes were *pro business* rather than *pro markets* which helped the incumbents. (c) These small changes elicited a large productivity response because India was far inside its PPF. Later studies suggest that India had very good institutions and legal framework for a country of its per capita income. Thus a shift of policy towards business friendly could elicit a large response (platform was already ready).
3. Deepak Nayyar explains it via (a) Expansionary fiscal policies. (b) Significant increase in investment as a proportion of GDP (from 20% to 26%). There was also a significant increase in the public investment starting in late 70s. Focus began to shift from establishing manufacturing units to creating infrastructure thereby generating positive externalities. (c) Liberalization of trade since late 70s and some deregulation efforts in 80s could have played an important role specially the relaxations on import of capital goods and broad banding of industries. Base was built in the past 30 years with respect to high technical and managerial education, creating legal framework, institutions.

Growth Rate Across the Plans

	Growth Rate
1st FYP (1951-56)	3.7%
2nd FYP (1956-61)	4.2%

3rd FYP (1961-66)	2.8%
4th FYP (1969-74)	3.4%
5th FYP (1974-79)	5.0%
6th FYP (1980-85)	5.5%
7th FYP (1985-90)	5.8%
8th FYP (1992-97)	6.8%
9th FYP (1997-02)	5.5%
10th FYP (2002-07)	7.8%
11th FYP (2007-12)	7.8%

Pre Reform vs Post Reform Growth

1. Economic growth from 1950-51 to 1990-91 was 4.1% and from 1990-91 to 2011-12 was 6.5%.

Growth in an International Perspective (constant PPP $)
Phase 1: 1951 - 65

1. Indian economy grew @ 4.11% p.a. which was slower than Latam and Asia ex Japan and same as Africa.

Phase 2: 1966 - 80

1. Indian economy slowed down sharply to grow @ 2.9% p.a. which was way behind any other part of the world where growth rates had in fact accelerated from the previous period.

Phase 3: 1981 - 90

1. Indian economy grew @ 5.75% which was higher than even Asia ex Japan. Growth rates of Latam and Africa crashed substantially to near stagnation.

Phase 4.1: 1991 - 2000

1. Indian economy is growing as fast as Asia ex Japan. Latam and Africa continue to grow slowly.

Parikh (2006) - Comparison of S Asian Experience

1. The study establishes that in S Asia growth has accelerated as there was a shift towards export orientation and encouragement to private sector by reducing controls.

Desai - Lessons from East Asian Experience

1. The high growth was a result of high rate of factor accumulation. The GFCF remained over 30% for these economies. There was a large increase in labor force due to rural to urban migration and a sharp increase in labor productivity.
2. Outward oriented trade strategy + growth mediated security. All of them were open to new foreign technology. They also put great effort on rural infrastructure development and agriculture development at the same time.
3. Close coordination between the state and the businesses to the point of making it business friendly instead of market friendly.
4. In China the fall in share of agriculture in GDP has been more or less in line with the fall in share of agriculture in employment unlike India.

	GDP	**GFCF**	**ICOR**
1951-52 to 1964-65	4%	11.5%	2.8
1965-66 to 1979-80	3%	15.3%	5.1
1979-80 to 1990-91	5.5%	20.5%	3.5
1991-92 to 2002-03	5.5%	23%	4.1
2003-04 to 2007-08	8.8%	30.2%	3.4

Phase 1 (1951-52 to 1964-65)
Patterns and Trends

1. GDP growth increased from 50s to 60s but declined sharply in 70s and increased in 80s. Large determinant in the fall in 70s and subsequent recovery in 80s was the corresponding fall and then growth in agriculture(from 2.5% in 60s to 1.3% in 70s to 4.4% in 80s). Similarly industry dropped from 6% levels in 60s to 4.5% levels in 70s to come back to 6.5% levels in 80s. Services showed a decline from 5% levels in 60s to 4% in 70s to 6.5% in 80s. Likewise the productivity signified by inverse of ICOR fell sharply in 70s and recovered in 80s (ICOR went from 4.3 in 60s to 6.6 in 70s to 3.6 in 80s.

Q. Provide an analytical description of growth and change in the Indian economy during the period from 1950-51 to 1966-67. (2009, II, 60)

Phase 2 (1965-66 to 1979-80)
Determining Factors

1. The twin droughts of 1965 and 1966 were a major shock to the economy. Food aid prevented large scale distress but the developmental strategy was radically altered.
2. By 1970-71, GR had stabilized and India had attained food security by any reasonable standards. Then major policy change occurred - poverty eradication rather than growth became the dominant consideration, banks were nationalized, MRTP was put in place, state took over food grain wholesale trading. Then came emergency and janta government and the policy remained difficult for any meaningful growth.

Phase 4: 1991 -
Performance of 9th, 10th, 11th and 12th (only targets) FYP

Economic Indicator	**9th FYP (1997-02)**	**10th FYP (2002-07)**	**11th FYP (2007-12)**	**12th FYP (2012-17)**
GDP growth	5.5%	7.8%	7.8% (a) vs 9% (t)	9%
Agriculture	2.5%	2.5%	3.2% (a) vs 4% (t)	4%
Industry	3.3%	8.6%	7%	9.6%
Services	8.1%	9.5%	10%	10%
GDS	23.6%	31.4%	32%	36.2%
GFCF	23.2%	30.1%	30%	33.5%

What are the strong fundamentals of Indian economy?

1. Demographic transition: It will give us more people to work as well as increase savings rate in future. However the main challenges are malnutrition, illiteracy and lack of skills.
2. High savings and investment rates. Moreover because India's ICOR is ~4 which is close to the world's best, additional acceleration in growth can only come with higher savings and investments. So we need to create an environment to do so. For this we need fiscal consolidation (but not at the cost of public investment), financial inclusion, structurally lower inflation (by supply side factors). Higher CAD can also be a threat.
3. Improved incentives structure. One way to ensure this is to have a more open economy. As an economy grows although balanced growth is desirable but it is generally not possible. Growth generates imbalances because income elasticities of demand for different sectors varies. These imbalances get reflected through price signals. Here foreign trade can come

and help as the economy may not be able to produce everything efficiently by itself. Typically import substitution strategies are associated with high levels of protection and state imposed capacity limits. Often the government fails and resource allocation becomes inefficient. But such a thing is not possible in an export oriented strategy as it responds to global demands and supply factors as well. Moreover India has a comparative advantage in services which is sustainable as an export.

4. Human capital accumulation and diffusion of new technologies. A country when inside its PPF can grow rapidly as it moves towards the PPF. But as it gets closer diminishing returns set in so the need is to shift the PPF out which is possible only by new technologies and investment in human capital. Similarly human capital can increase the quantity of labor available as it makes the labor more productive and also generates external economies of scale.
5. TFP accelerators through network industries.
6. Improved security environment.

Drivers of Growth & Issues

1. Savings
2. Fiscal sustainability: Also the reduction shouldn't be in public investment.
3. Low and stable inflation: We need a structurally low inflation to remove uncertainties and promote investment. Pre crises we had a low (relatively) inflation for many years and also high growth.
4. Liberalization, proper policy and incentive environment
5. Sustainable CAD
6. Sound financial system and more inclusion
7. Raise agriculture growth
8. Raise employment in non agriculture sector: Due to fall in agriculture's share, non agriculture employment needs to be raised by 6% p.a.
9. Infrastructure development
10. Protecting environment
11. Developing human resources
12. Improving rehabilitation practices
13. Improving governance

Crisis Situation in 1991

1. We ran consistently high fiscal deficits in 80s (from about 6% in the beginning of 80s to 9% by the end). As a result, public debt had risen to 60% of GDP up from 30% in early 80s.
2. Dependence on foreign borrowings also increased and public external debt rose to 21% in late 80s.

Structural Changes Since 1991

1. Savings & Investment: GCF was 25% in 1996-97 and remained static till 2002-03. Since then it began to rise and rose to 33.5% in 2005-06 and 38.1% in 2007-08 and back to 35% in 2011-12. Savings has come up from 22% in early 90s to 36.8% in 2007-08 and 32.3% in 2010-11.
2. Growth rate: India's growth rate was 5.5% in the 80s and in the post reform period trend growth rate has been 6.9%.
3. Fiscal deficit: India was running a fiscal deficit of ~8% in 1980s which has come down to 5.7% post reforms. But this progress masks the methods used to lower the fiscal deficit. Revenue deficit has actually gone up from 2.6% in 80s to 2.9% post reform. Capital expenditure to total government expenditure has fallen from 30% in 1991 to close to 20% in post reform period. As a ratio of GDP it has come down from 5.5% to 2.5% now.
4. Prices: There has been increased divergence between WPI and CPIs because CPIs give more weightage to food and other items of mass consumption. This indicates that food prices have gone higher.

Structural Changes in Economy Since 2008 Crisis

1. Low savings & investment: Savings has fallen full 4.5% points from high of 36.8% in 2007-08 to 32.3% in 2010-11. After a low of 32% in 2008-09, it seemed to recover, but fell back. The 12th Plan target for savings rate is 36.2% which is full 4% higher. Investment rate shows a similar picture. It is nearly 3% points below 2007-08 high and the recovery in the next year proved unsustainable. The 12th Plan target for GCF is 37.5% (33.5% for GFCF) for a 9% GDP growth. Current GCF is 32.7% and GFCF is 29.5%. An increase of 4% is needed.
2. Inventory restocking led recovery: In the pre-crisis years, the growth in GFCF was consistently between 14-16% but post crisis, it could never recover (despite the base effect) and remained in the range of 5-7%. This shows lack of belief in business prospects. The recovery was led by inventory restocking which after falling by ~50% in 2008-09, rose by 60% in 2009-10 and 40% in 2010-11. But this is not sustainable. Until GFCF improves, growth can't be sustained.
3. Higher current account deficits: Prior to the crisis years, India was running a CAD of ~1% of GDP. But since crisis, CAD has gone up in 3-3.5% levels and remains stubborn there. CAD in expected to be 4.5-5% in 2011-12. Indian logic is higher CAD => higher capital generated. But this assumes that domestic savings is independent of CAD. Higher CAD leads to lower savings since - (a) higher consumption by households and factor shares go abroad. (b) lower revenue collections by government. So a gap will come and CAD = capital inflows but these capital inflows would be a result of domestic savings getting crowded out.
4. Stable households vs falling corporates: The growth rate of personal consumption has been around 6-8% consistently. Similarly, household savings and investment (includes MSMEs) have remained stable @ 23% and 13% of GDP respectively (actually investment increased from 10.8% in 2007-08). On the other hand corporates have not been able to reach the pre-crisis zone. Corporate savings are down from 9.4% in 2007-08 to 7.9% in 2010-11 (fall of 1.5%) and investment from 17.3% in 2007-08 to 12.1% in 2010-11 (fall of 5.2%). Government savings have gone down from 5% in 2007-08 to 1.7% in 2010-11 and investments remained stagnant @ 8.8% from 2007-08 to 2010-11.

No Service 10:33 PM 49%

0.1 KEY INDICATORS

	Data categories and components	Units	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
1	**GDP and Related Indicators**							
	GDP (current market prices)	₹ crore	4294706	4987090	5630063	6457352[PE]	7674148[QE]	8912178[AE]
	Growth Rate	%	16.3	16.1	12.9	14.7	18.8	16.1
	GDP (factor cost 2004-05 prices)	₹ crore	3564364	3896636	4158676	4507637[PE]	4885954[QE]	5222027[AE]
	Growth Rate	%	9.6	9.3	6.7	8.4	8.4	6.9
	Savings Rate	% of GDP	34.6	36.8	32.0	33.8	32.3	na
	Capital Formation (rate)	% of GDP	35.7	38.1	34.3	36.6	35.1	na
	Per Capita Net National Income (factor cost at current prices)	₹	31206	35825	40775	46117	53331	60972
2	**Production**							
	Foodgrains	Mn tonnes	217.3	230.8	234.5	218.1	244.8	250.4[a]
	Index of Industrial Production[b] (growth)	Per cent	12.9	15.5	2.5	5.3	8.2	3.6[c]
	Electricity Generation (growth)	Per cent	7.3	6.3	2.7	6.1	5.5	9.4[c]
3	**Prices**							
	Inflation (WPI) (52-week average)	%change	6.6	4.7	8.1	3.8	9.6	9.1[d]
	Inflation CPI (IW) (average)	%change	6.7	6.2	9.1	12.4	10.4	8.4[d]
4	**External Sector**							
	Export Growth (US$)	%change	22.6	29.0	13.6	-3.5	40.5	23.5[d]
	Import Growth (US$)	%change	24.5	35.5	20.7	-5.0	28.2	29.4[d]
	Current Account Balance (CAB)/GDP	Per cent	-1.0	-1.3	-2.3	-2.8	-2.7	-3.6[e]
	Foreign Exchange Reserves	US$ Bn.	199.2	309.7	252.0	279.1	304.8	292.8[f]
	Average Exchange Rate	₹/US$	45.25	40.26	45.99	47.44	45.56	47.70[g]
5	**Money and Credit**							
	Broad Money (M3) (annual)	%change	21.3	21.4	19.3	16.8	16.0	14.4[h]
	Scheduled Commercial Bank Credit (growth)	%change	28.1	22.3	17.5	16.9	21.5	16.4[h]
6	**Fiscal Indicators (Centre)**							
	Gross Fiscal Deficit	% of GDP	3.3	2.5	6.0	6.5	4.8[i]	4.6[j]
	Revenue Deficit	% of GDP	1.9	1.1	4.5	5.2	3.2[i]	3.4[j]
	Primary Deficit	% of GDP	-0.2	-0.9	2.6	3.2	1.8[i]	1.6[j]
7	**Population**	Million	1122	1138	1154	1170	1210[k]	na

[AE] GDP figures for 2011-12 are advance estimates; [QE] Quick estimates; [PE] Provisional estimates.
na not available
[a] Second advance estimates.

Q. Write on second generation economic reforms in India. (2011, II, 15)
Why does gold remain a popular asset?

1. Financial inclusion is low in India. So when people have no access to formal financial market, they use gold which is liquid and mortgageable. Vast majority of Indians don't have access to organized credit.
2. It is an inflation hedge. Rising popularity of gold can also be seen as declining confidence in INR.

Productivity: Trends

	GDP	GFCF	ICOR
1951-52 to 1964-65	4%	11.5%	2.8
1965-66 to 1979-80	3%	15.3%	5.1
1979-80 to 1990-91	5.5%	20.5%	3.5
1991-92 to 2002-03	5.5%	23%	4.1
2003-04 to 2007-08	8.8%	30.2%	3.4

Phase 1: 1950 - 65

1. The TFP growth was 2.8% in the 1st plan while in 2nd and 3rd plan it fell to 0.4% and overall it was 1.3%. The fall is attributed to higher capital intensity in 2nd and 3rd plan.

Phase 3: 1980 - 90

1. Sharp recovery in productivity: TFP growth which was -0.2% between 1966-67 to 1979-80 rose to 3.4% in 80s.

Phase 4.1: 1990s

1. It has been documented that there was a decline in TFPG between 60s and 80s (ICOR was 4.3 in 60s, 6.6 in 70s, 3.6 in 80s and 4 since). From mid 80s there was a turnaround. But in 90s the TFPG growth declined.

Tertiary Sector

Is India getting over tertiarized?

(a) Traditional view: Chenery and Kuznets

1. They said that economic growth will be associated initially by a sharp decline in agriculture and a significant increase in industry's share and a more modest increase in services. Its only later that the share of manufacturing becomes stagnant or declines and services go up.
2. In the period 1950-90 , the share of India's services sector in GDP was lower than the international norm, going by per-capita income. This was because, in the country's then-controlled economy , a large portion of resources in the earlier part of the period had been pre-empted by heavy industry.
3. 1950-51 to 1989-90: Agriculture down from 56% to 36%. Industry up from 16% to 25% and services up from 28% to 39%. Thus we didn't exactly follow Chenery and Kuznets pattern. Since 1989-90, industry has remained stagnant and all the decline in agriculture has been cornered by services.

(b) Modern view: Kongsamut's cross country study

1. He studied more data and a later period than Chenery and Kuznets and found that rise in services is more than what is predicted by Chenery and Kuznets. Thus he found that share given up by agriculture goes more to services than industry.

(c) Modern view: World Bank study

Sectoral Share (%)	Agriculture	Industry	Services
Low income (<$750)	24	32	45
Lower middle income (< $3K)	12	40	48
Upper middle income (< $9.2K)	7	33	60
High Income (> $9.2K)	2	29	70

1. As the economy grows share of services grows along with a decline in share of agriculture. The share of industry grows initially modestly and then stabilizes or declines.
2. It can be seen (table below) that India's services share is higher than the lower middle income countries and this pace has only increased instead of decreasing post reforms. Even the growth rate has been higher than industries since 90s.
3. Gordon and Gupta find that in 1990, share of India's service sector in GDP was very close to the average share predicted by the linear relationship. However, as a result of rapid growth of services in 1990s, by 2001, India's moved above the average share. They argued that at the same growth rates by 2010, the share of services would increase to 58% and India will be an outlier, closer to that of an upper middle income country, even though India would still belong to the low income group. This has actually happened.

Sectoral Share (%)	Agriculture	Industry	Services
1950	58	15	27
1980	38 (-20)	24 (+9)	38 (+11)
1990	33 (-25)	27 (+12)	40 (+13)
2011-12	13	27	60

Composition of India's Service Growth

	Share in GDP	1980s	1990s	2000s
Trade	15%	6%	7.3%	9.5%
Transport	5.5%	6.3%	7%	8%
Communication	3%	6%	13.5%	25%
Financial Services	8%	11.7%	12.5%	17%
Business Services	5%	13.5%	20%	17%
Community and personal services	14%	6.5%	7%	8%

1. Services classification: Based on international experience services can be divided into 3 groups vis (a) Traditional services (retail and wholesale trade, transport and storage, public administration and defence) which tend to be slow-growing. (b) Hybrid services (education, health and social work, hotels and restaurants , and other community, social and personal services) whose share in GDP in economies has risen in step with per-capita income. (c) Modern services (financial services, computer services , business services, communications , and legal and technical services) which grow much faster than rise in income.
2. In India, the modern group has taken off at a lower per capita level than seen in OECD economies. Despite their small share, they have together contributed more towards growth of GDP than manufacturing. Most of the growth is on account of an increase in private final demand and exports.
3. Growth leaders: Business services @ ~ 20% p.a. for last two decades. Their share has increased from 1% at the beginning of reforms to 5% now in GDP. Communications is another winner. Financial services too have benefitted. All these sectors are ones which benefitted from liberalization.
4. Growth laggards: Community services, trade, transport are the laggards which have grown at the trend rate only.

Trends in Services Imports

1. Business services are the most important category of services imports (up from 7% in 2000-01 to 30% in 2009-10).
2. Next important components are travel and transport but their share is declining (from 44% in 2000-01 to 35% in 2009-10).

Trends in Services Exports

1. Software exports increased from 39% of our services exports in 2000-01 to 52% in 2009-10.
2. Next important are travel and transportation but their share has declined from 34% in 2001-02 to 24% in 2009-10.

Is Services led growth sustainable?

1. Limited domestic demand argument vs export demand argument: Domestic demand for services is limited in the absence of sufficient growth in industry. Any attempt to expand the volume of services production beyond the limits of domestic demand would quickly lead to deterioration in the price of services and diminishing returns. In Indian cases studies show that higher real growth in services has not been offset by price declines. India has a higher share of services, and more rapid service sector growth, than China, although the latter is richer and has grown faster over time. That suggests that services are not simply responding to domestic demand (which would be higher in China), but also to export opportunities.
2. Self feeding growth argument: Banga and Goldar (2004) find a positive relationship between use of services input and industrial productivity. Their results show that the increase in use of services in manufacturing in the 1990s has favorably affected productivity in the manufacturing sector. In the light of this result, they argue that India's service sector will be successful in creating its own demand since higher use of services in the manufacturing sector has not only lead to higher output growth in manufacturing sector but also improved productivity in the manufacturing sector.
3. Law of diminishing returns argument: Kaldor (1966) argued that there will be a negative relationship between productivity growth in the economy and the productivity growth in the non-manufacturing sector as non manufacturing activities subject to diminishing returns. Further, Baumol (1967) helped in popularizing the notion that because of their labour- intensive nature, service-sector activities cannot be made more efficient through capital accumulation, innovation, or economies of scale.
4. Lower productivity argument: Services were considered to have lower productivity and growth than industry. As economies became more service oriented, their growth slows. For rich

countries it is an acceptable consequence of the higher welfare that could be achieved by a switch towards services. But for developing countries such a trade off was thought to be inappropriate. But India's growth has in fact been led by services, that labour productivity levels in services are above those in industry. The productivity growth in service sectors in India matches productivity growth in manufacturing sectors in China.

5. Low skilled labor argument: Services jobs in developing countries were thought of as menial and to be performed by low skilled workers.
6. International trade in services is currently very low: Services account for ~67% of world GDP and yet their share in international trade is very low. As technologies improve more and more trade in services will be possible.
7. Outlook on sustainability of growth in modern services: Outsourcing by foreign companies is bound to continue because it is a business imperative. The market for IT as well as financial services within India remains under-penetrated too.
8. Outlook on sustainability of growth in hybrid services: Education and healthcare both need to expand considerably in order to meet domestic demand. Sectors like trade, education, health are yet untouched by liberalization.
9. Outlook on sustainability of growth in traditional services: Transport, hotels and retail trade all have untapped potential. Sectors like trade, education, health are yet untouched by liberalization.
10. Ability to provide employment: Many have argued that while services may provide growth, low-cost manufacturing alone can provide adequate employment. The vast majority of workers would not have the skills necessary for employment in services. But low skilled jobs are coming up in services. Several firms have set up call centres and data entry centres in the rural areas. Financial services and communications too have shown they can generate large numbers of relatively low-skilled jobs. Still employment elasticity of services has greatly reduced.
11. FDI flows in services: Inflow of FDI into services sector has been biased towards telecommunications and financial services. One of the striking features of India's FDI flows is the growing proportion of outward FDI from the services sector. The share of services in total FDI outflow increased to around 45 percent in the period 1999-2003, in which non-financial services constitute around 36%, trade is around 5% and the rest was from financial and other services.
12. Resilience: Services now account for ~60% of GDP. In post-crisis years, even though manufacturing and agriculture have faltered, services sector has remained firm. In 2011-12 while manufacturing growth fell to 3.5% and agriculture to 2.5%, services remained @ 9.3% and in 2010-11 it was 9.4%. Traditionally primary sector gives way to secondary gives way to manufacturing. But in India, services sector has outgrown everything else.
13. Services however, account for 147 people in rural and 582 people in urban areas out of every 1000 employed in 2010-11. But the difference is that in developed nations, manufacturing is low due to high labor costs (whereas they are still cheap in India and the constraint is more of capital / technology / institutional framework) and while in developed countries ~5% of labor force is engaged in agriculture, in India ~52% is agriculture dependent.
14. 12th FYP on services: 12th FYP says that while the services sector has been growing fast, it alone cannot absorb the 250 million additional income-seekers that are expected to join the workforce in the next 15 years. So manufacturing has to become the engine of growth. To balance trade, the country's export basket must include a much larger volume of manufactured goods. India can't rely on its exports of services alone to bridge the gap, since tradable services such as IT enabled services; though growing very robustly cannot sustain this growth. International experience shows that for manufacturing to grow we need to have very good coordination between the policy makers and industry. This is called 'planning as learning' as against 'planning as allocations'. Similarly tourism and construction have great potential as well and they are employment intensive as well.

Causes of Tertiarization

1. Income elasticity of services demand is > 1. This is because India has developed a large middle class which was services deprived earlier. So as their purchasing power increases they demand more services. Take for example telecom and insurance sectors - huge untapped market lying in them. Liberalization led to this freeing up of Indian demand for services. Till then proportion of services in private final consumption expenditure was growing at ~3% per decade i.e. from 8% in 1950-51 to 11% in 1960-61 to 14% in 1970-71 to 17% in 1980-81 to 20% in 1990-91. Since then it rose to 31% in 2000-01 and 40% now.
2. Outsourcing / splintering i.e. instead of carrying services inhouse it is now more profitable to outsource it and lower costs. Examples are activities like marketing, advertising, data analysis etc.
3. Manufacturing needs a favorable overall environment including raw materials, infrastructure, favorable technology, marketing and labor laws etc. India doesn't have comparative advantage in any of these. Instead services require a market as well as skilled human capital. This is where India's comparative advantage lies - again thanks to huge middle class.
4. India is specializing in skill intensive industries because skilled workers and professionals are outside the purview of trade unions.
5. In a free trade world restrictions on imports of goods are going down but services are not yet covered. Moreover in case of many services we can't import them, they have to be produced here.

Inter Regional Disparities in Growth

Trends in growth performance

1. 90s - growing divergence: While the poor states (BIMARU + Odisha + W Bengal) growth rate actually fell from 5% in 1980s to 4.8% in 90s and Punjab + Haryana from 5.9% in 80s to 5.4% in 90s the southern and western coastal states really took off. Their growth rate increased from 5.2% in 80s to 6.8% in 90s. Special category states grew only @ 5.6% in 90s. Thus 90s were a clear case of increasing interstate divergence. Gini coefficient: 1980-81: 0.15, 1990-91: 0.17, 1998-99: 0.23.
2. Last 1 decade: convergence (Pangariya): As we see the reforms had created winners and losers among states in 90s. But as the effect spread and economic activity picked up, the benefits began to spread in all states. While the special category states showed an increase of 2.8% in growth rate (5.6% in 90s to 8.4% from 2004-05), BIMARU + other poor states showed an increase of 3.2% (4.8% in 90s to 8% from 2004-05), Punjab + Haryana showed an increase of 2.7% (5.4% in 90s to 8.1% from 2004-05) the rich states showed an increase of 2.8% (from 6.8% in 90s to 9.6% from 2004-05). Only states lagging are J&K and Assam which were hit by insurgency. On the other hand, some of the poorest states like Rajasthan, Odisha showed highest growth rate in 2000s except for Gujarat and Haryana.
3. Policy impact: Unlike China the regional pattern of growth was not a result of any deliberate policy decision i..e creating SEZs only in coastal zones and so on. On the contrary efforts to spread the growth are bearing fruits now.
4. Rich didn't get universally richer: Moreover it is not universally true that the rich got richer. Punjab and Haryana which were among the richest states prior to liberalization actually saw a decline in growth rates. This is because they became rich on back of agriculture and the liberalization hasn't had as much impact on agriculture as on industry and services. Also some poor states like Rajasthan and MP performed well even in 90s. The performance of middle income states was clustered around the average rate.
5. Seeds of divergence lay in pre reform period: In 1960s, per capita GSDP of top 3 rich states (Punjab + Maharashtra + Gujarat) was ~ 1.8x of bottom 4 (Bihar, UP, MP, Odisha). In 1970s, it went up to ~2.25x and in 80s was reduced to ~2x. Thus grave inequalities existed even before the reforms. In 90s it escalated to ~3x. The gradual liberalization in 80s meant that states could now differentiate themselves in attracting investment and also the share of private investment grew.
6. Sectoral variation: Inter state variation in growth of primary sector is little compared to variation in industry and services growth. This is because land and labor is fairly distributed across the country, green revolution is quite widespread while the industry and services require agglomeration economies and infrastructure.

Special category states (NE + HP + Uttarakhand + J&K)

1. GSDP growth: 1994-95 to 2001-02: 5.6%, 2004-05 to 2011-12: 8.4%.
2. Fiscal deficit to GSDP: 2009-10: 3.8%.
3. Own tax revenue to GSDP: 2009-10: 4.9%, 2010-11 (BE): 4.1%.
4. Outstanding public liabilities to GSDP: 2009-10: 45%.
5. % of population in poverty: Between 2004-05 to 2009-10 overall fall of 3% (from 28.3% to 25.3%), rural fall of 4.2% (30.4% to 26.2%) and urban rise of 2.6% (19% to 21.6%).

BIMARU States (+ Odisha + Jharkhand + Chattisgarh + W Bengal)

1. GSDP growth: 1980-81 to 1990-91: 5%, 1994-95 to 2001-02: 4.8%, 2004-05 to 2011-12: 8%.
2. Fiscal deficit to GSDP: 2009-10: 3.6%.
3. Own tax revenue to GSDP: 2009-10: 5%, 2010-11 (BE): 6.2%.
4. Outstanding public liabilities to GSDP: 2009-10: 29.5%.
5. % of population in poverty: Between 2004-05 to 2009-10, overall fall of 6.2% (43.9% to 37.7%), rural fall of 6.7% (47.4% to 40.7%) and urban fall of 4.2% (31.5% to 27.3%).
6. Plan expenditure to GSDP: 1980-81 to 1990-91: 6.1%, 1991-92 to 1997-98: 4.8%.

Gujarat + Maharashtra + Kerala + TN + Karnataka + AP

1. GSDP growth: 1980-81 to 1990-91: 5.2%, 1994-95 to 2001-02: 6.8%, 2004-05 to 2011-12: 9.6%.
2. Fiscal deficit to GSDP: 2009-10: 3.5%.
3. Own tax revenue to GSDP: 2009-10: 7.4%, 2010-11 (BE): 8%.
4. Outstanding public liabilities to GSDP: 2009-10: 28.3%.

5. % of population in poverty: Between 2004-05 to 2009-10 overall fall of 10.6% (31.9% to 21.3%), rural fall of 13.1% (37.6% to 24.5%) and urban fall of 6.1% (22.8% to 16.7%).
6. Plan expenditure to GSDP: 1980-81 to 1990-91: 5.8%, 1991-92 to 1997-98: 4.8%.

Punjab + Haryana

1. GSDP growth: 1980-81 to 1990-91: 5.9%, 994-95 to 2001-02: 5.4%, 2004-05 to 2011-12: 8.1%.
2. Fiscal deficit to GSDP: 2009-10: 4%.
3. Own tax revenue to GSDP: 2009-10: 6.1%, 2010-11 (BE): 7.2%.
4. Outstanding public liabilities to GSDP: 2009-10: 26%.
5. % of population in poverty: Between 2004-05 to 2009-10 an overall fall of 4.5% (22.4% to 17.9%), rural fall of 6.8% (23.4% to 16.5%) and urban fall of 0% (@ 20.3%).
6. Plan expenditure to GSDP: 1980-81 to 1990-91: 6%, 1991-92 to 1997-98: 3.9%.

Ramaswamy on Interstate Growth Experience from 1993-94 to 2004-05

1. The richer and middle income states have grown at a faster rate than the poor states throughout. The interstate variations only increased in 1999-00 to 2004-05 compared to previous 5 years. Between 1999-00 to 2004-05, 2 of the bottom 5 states vis UP and Rajasthan have witnessed impressive employment growth. Among the middle and richer states, W Bengal, Karnataka, Haryana and Maharashtra witnessed good growths. In the post reform period, growth has been led by services. Its share in GDP went up from 37% to 58% but share in employment only went up from 18.5% to 24%.
2. In the post reforms periods, employment growth in urban areas is faster than rural areas. In the richer states the employment growth is faster than the poorer states.
3. Diversification of state economies and impact on growth: Ramaswamy evaluates the impact of reforms in diversifying the share of sectors in the states' employment. He finds that all the states have shown signs of moving towards more diversification of their economy but poorer states with less diversified economies in the beginning of the period are diversifying at a slower rate. Among the poorer states only Odisha shows significant diversification, while in the middle income states only Kerala showed higher diversification. In the richer states TN shows higher diversification while Karnataka shows lower diversification. Then he tests if the states which were more diversified in the beginning of the reforms grew at a faster pace. And the result was yes.
4. Spatial distribution of certain sectors: Then he examines if the spatial concentration of some sectors has increased or decreased over time. The HH index for this can be given by $\sum(s_i - x_i)^2$ where s_i is the share of the ith state in the employment in the sector while x_i is the share of the ith state in the overall employment in the country. He finds while manufacturing concentration has declined since reforms, services increased in the first sub period but decreased subsequently. However finance, real estate and business services (including software) have grown in spatial concentration since the reforms.
5. Sectoral dualism: organized vs unorganized: Has the gap between manufacturing in organized and unorganized sectors increased across states? He finds that organized sectors share in total employment is not only higher in richer states but has also grown at a faster pace in the post reforms period compared to the poorer states. Thus poorer states have proportionately more low productivity jobs now. Not only this in the post reforms period the relative labor productivity in the unorganized sector (as a proportion to the labor productivity in the organized sector) has been going down. Coupled with the fact that poorer states are seeing slower growth in organized manufacturing it means their relative productivities are going down at a faster pace.
6. Labor productivity across states: Manufacturing productivities of the poorer states are not only lower than richer states but also are declining in the post reforms period. Similarly in the high productivity financial and business services sector we find the same trend.

Explanations for the Growth Performance - Rising Inequality

1. Investment pattern: As can be seen public investment showed a steep decline in 90s compared to 80s. Fall in public investment and rise in private investment tends to accentuate the inequalities. Even in that the share of states in the plan expenditure is falling (down from 50% in 80s to 40% in 90s). FDI in the richer states + Delhi account for > 50% of inbound FDI while bottom 4 sates account for just 10%.
2. Resource raising capacity: The decline in tax - GDP ratio of the center in post reforms period has meant fall in central assistance which in turn forces states to rely on their internal resource generation capacity which varies greatly across the states. While the rich states had own tax revenue to GSDP ratio of 8% in 2010-11 (BE), Punjab + Haryana had it @ 7.2%, BIMARU + poor states @ 6.2% and special category states @ 4.1%. Poor states also have higher outstanding public liabilities to GSDP (specially for special category states @ 45% in 2009-10) which hampers their ability to raise resources from the market.

Pangariya (2008): Growth Performance of New States

1. Uttarakhand (from 1.4x to 2x) and Chattisgarh (from 0.9x to 1.3x) have raced ahead of their mother states since the time of creation in terms of per capita income. But Jharkhand's situation has deteriorated. But now they are growing at faster rates and in fact since 2003 their growth has been faster than the mother state's growth.

Kumar and Subramaniam (2012)

1. Kumar and Subramaniam (2012) report four major findings, vis (i) growth across all major states increased during 2001-09 as compared to 1993-2001, (ii) continued divergence or rising inequality across states over the time span 2001-09 as well as 1993-2009 and 1971-2009, (iii) the faster growing and more globalized states during 2001-07 suffered the largest setbacks during the crisis years of 2008 and 2009, and (iv) the benefits of the demographic dividend evident in the 1990s seem to be petering out/diminishing during the 2000s.
2. The article further reports that the magnitude of divergence has increased in the 2000s as compared to the 1990s i.e. divergence is increasing at an accelerating pace.

Private Final Consumption Expenditure

1. In 1971, an Indian consumer used to spend 50% of his income on food, in 2010-11 he spent 32%. While this decline indicates rise in incomes (food being lower elasticity item), the figure of 32% is still high indicating overall poverty.
2. The expenditure on transport and communications has increased from 5% in 1971 to 20% now. This indicates rural --> urban migration.
3. Similarly the expenditure on rent, fuel and power has gone up from 6% in 1971 to 12% now. This indicates rural --> urban migration.

Savings & Investments

1. Savings-investment gap: GDS: 32.3% in 2010-11 and 30.4% in 2011-12 after reaching a high of 36.8% in 2007-08. GCF is 33.7% in 2010-11 and 32.7% in 2011-12 and GFCF is 29.5% as against 32.9% in 2007-08 and 30.4% in 2010-11. In early 90s, savings and investment rates were 23% and 24% respectively. Private savings = 30.7% of GDP (households: 22.8%, corporates: 7.9%), private investment = 25% (households: 13, corporates: 12). This means remaining 5.7% is the savings-investment gap for private sector. Public savings = 1.7%, public investment = 8.8% => savings-investment gap for public sector = -7%.
2. Financial vs physical savings: Households can save in financial assets or physical assets (gold, land etc.). Because real rates of interest have been negative due to financial repression, households have traditionally preferred to save in physical assets. Only between 1983 to 1999 the financial savings exceeded physical savings. Financial savings by households now increasingly depend on the business environment and risk appetite. It increased from 10% in 2004-05 to 11.5% in 2007-08, fell to 10% in 2008-09 and in the market recovery of 2009-10 it rose to 13%. But in 2010-11 it came back to 10%. Physical asset savings show an opposite trend declining from a high of 13.5% in 2004-05 to a low of 10.8% in 2007-08. Then it spiked to 13.5% in 2008-09, fell to 12.4% in following year but in 2010-11, it rose to 12.8% again. Corporate sector and public savings are mostly in financial form. Most popular instruments of financial savings for households are LIC, currency holdings, PPF, bank deposits in that order. Since 1991, investments in stock market have gone up too.
3. Public savings: Public savings reflects contra-cyclical trend as it increased from 2.3% in 2004-05 to 5% in 2007-08 and the down to 0.2% in 2009-10 and then rise again to 1.7% in 2010-11.
4. Corporate savings: It is the private corporate sector savings and investments which show a worrying trend. They have not been able to recover to their pre-crisis zone in the 2 year long recovery. High of corporate savings was 9.4% in 2007-08 which is now only 7.9% in 2010-11. Investment high was 17.3% which is now only 12.1%. The government investment has remained static while household investment has gone up from 10% in 2007-08 to 13% in 2010-11.
5. Investment: Initially investment by households > public sector > corporates. Then due to our plans, GFCF public sector overtook all others and by 1967 it was the highest. From 1967 onwards till 1991, household improved but corporate sector lagged behind. Only from 1991 did corporate GCF began to grow. In 2011-12 households was again higher than corporates.

Reasons for Substantial Rise in Savings Rate from 2001-02

1. Change: In 2001-02, GDS was 23.5% out of which households were 22%, private sector was 3.5% and public savings were -2%. It rose to 36.5% (+13%) in 2007-08 with households @ 21.5% (+0.5%), corporate sector @ 8.9% (+5.5%) and public savings @ 5% (+7%). In 2010-11 it declined to overall 32.3%, households @ 22.8%, private sector @ 7.9% and public savings @ 1.7%.

2. Reason for rise in private sector savings was rise in profitability and also reduced dividend rates. Public savings grew as a result of rising taxes (corporate tax rose from 1.9% in 2003-04 to 3.6% in 2007-08 due to rising profitability, overall grew from 8.9% in 2003-04 to 10.7% in 2007-08) and also FRBMA.

Long Term Trends

1. Since independence, our emphasis has been on increasing savings and capital formation only and hence capital output ratio has been neglected traditionally. This has led to a higher capital output ratio.
2. Our growth model has been the Lewis model i.e. increase savings, use this increased savings for capital formation for increased savings for a further increase in capital formation and so on.
3. We remained stuck in hindu growth rate for many decades and only made a transition to an unsustainable high growth rates in 80s. Only after markets were freed up in 90s, did we achieve sustainable high growth rate.
4. Growth rate has also been low due to the "crises" years and if we adjust for them, the growth rate has been high. Such crises were caused by severe drought, wars and oil shocks. But the effect of drought, wars and oil shocks were both nullified in subsequent recoveries.
5. In the 1st FYP, the growth rate was 3.6% and in the 2nd FYP it was 4.2%. But the twin wars and the drought broke the back of the 3rd FYP and the growth was only 2.8%. Due to multiple factors and 1st oil shock, growth rate remained subdued till mid 70s and as it began to break through in later 70s, the 2nd oil shock pushed it back. The high growth rates of 80s turned out to be unsustainable.

Phase 1: 1950 - 65

1. GDS increased from 10.4% in 1950-51 to 13.9% in 1955-56 to 12.7% in 1960-61 and 14.5% in 1965-66. This increase of 4% was split 2% in household, 0.5% in corporates and 1.5% in public savings. Since the end of 1st FYP, the overall GDS increased only 0.6% while public savings increased 1.4% meaning a decline in the HH savings.
2. During this period while the overall increase in savings was modest, the financial infrastructure was built. Also the overall savings was low due to predominance of agriculture in the economy (Chakravarty, 1973).
3. GCF increased from 10% in 1st FYP to 14.5% in 3rd FYP. Thus the dependence on foreign aid grew.

Phase 2: 1965 - 80

1. GDS increased from 14.5% in 1965-66 to 12.8% in 1968-69 to 23.2% in 1978-79. The decline in late 60s was due to severe drought while the jump in 70s can be attributed almost entirely to increase in HH savings.
2. The effect of bank nationalization can be seen that the financial savings of HH increased from 2.2% in 1968-69 to 6.4% in 1978-79. The overall increase in savings was also due to bank nationalization and setting up of RRBs. With the GR, the agricultural income increased (and also became more skewed) and this led to increase in HH savings (Krishnamurthy and Saibaba, 1981). In the later half of 70s, apart from the above 2 factors, another contributing factor was high inward remittances from NRIs.
3. GCF stood at 20% in 1980 (up from 14.5% in 1965) and GDS stood at 18.5% in 1980 (up from 12.6%). During late 70s, the savings exceeded capital formation as the higher inward remittances were not profitably invested (Shetty and Menon, 1980).

Phase 3: 1980 - 90

1. GDS declined from 23.2% in 1978-79 to 18.4% in 1984-85 and increased back to 22.4% in 1988-89. The decline was due to oil shock. During the 6th FYP, the GCF also fell and mainly due to fall in HH GCF.
2. Public savings over the period however declined by 3% from 4.6% to 1.6% reflecting worsening fiscal position. The decline in HH savings was due to higher consumption (on consumer durables) (Chakravarty, 1990).
3. GCF was 26% in 1990 while GDS was 23%. Infrastructure investment was 6.1% of GDP.
4. This period witnessed a widening of the savings - investment gap which had to be financed by foreign borrowings. CAD widened to 3.2% of GDP in 1990-91.
5. Specifically public sector borrowing gap widened from 3.7% in 70s to 8.2% in 1990-91. This led to a substantial increase in public debt. The rise of public borrowings led to increasing financial repression with rise in SLR rates. SLR went up from 20% in early 50s to 25% in 1964 to 34% in 1980 and 38.5% in 1990. Still due to high money growth CRR had to be continuously increased.

Phase 4: 1990 - till date

	1970s	1980s	1990-91	2006-07
Fiscal Deficit	3.8%	7%	8%	4%
Revenue Deficit	-	1.7%	3.3%	2.7%

1. In the 8th FYP, GDS increased to 25% which was made possible by increase in HH savings to 20% and corporate savings to 4%. Public savings remained on a downtrend.
2. In the years following the crisis till 1993-94, the HH savings actually fell from 20% in 1990-91 to 16% in 1993-94 which was due to higher consumption by elite and middle class as they drew into their physical stock of savings (Rao, 1995).
3. Overall GCF is 32.7% in 2011-12 and GDS is 29.5%. Rising share of manufacturing in GCF: It has gone up from 27% in 1980s to 40% in 2000s.
4. Despite the fiscal correction efforts, public savings continued to deteriorate in 90s and even turned negative in 1998-03 period due to sharp decline in government administration savings (from 1.8% in 1990-91 to -5% in late 90s). A major reason for this dissavings was a fall in tax revenues from 10.3% of GDP in 1990-91 to 8.2% in 2001-02. Part of it was due to rationalization of tax brackets and lowering of indirect taxes (their benefits show with a lag).
5. On the other hand the savings of NDEs has been rising steadily from 2.5% in 80s to 3% in 1990-91 to 3.5% in 90s to 4% in 2006-07. Similarly savings rate of private enterprises has come up from 1% in 50s to 2% in 80s to 8% now.
6. Most of the compression in fiscal deficit since 1990-91 has been achieved by a cut in investments. Thus while from 1991 fiscal deficit has been brought down from 8% to 4%, revenue deficit has come down only by 0.6%. Indian experience suggests one of the benefits to stick to fiscal consolidation as it increases savings availability for private sector investment.
7. Household savings since independence have been steadily rising - from 6.5% in 50s to 7.5% in 60s to 11.5% in 70s to 13.5% in 80s and it was 18.5% in 1990-91. The share of financial savings in that increased till 1990-91 irrespective of the business cycles. After reforms, financial savings were 60% of household savings during the 8th FYP. In 9th FYP recession it fell to 50%. The it remained almost stationary in the next boom cycle (till 2008) @ 47% - due to tremendous increase in housing loans, personal loans and loans to SSIs (while gross household savings grew by 4.5%, liabilities rose by 3% negating much of the increase in the savings in the boom period). Now it is only 43% (down from 55% in 2007-08).

Sectoral Composition of GDP

1. Between 1950-51 to 1980-81, industry recorded a higher growth than services which led to its share in GDP going up from 16% to 25%. But since then services have outgrown and the decline in agriculture's share has been lapped up by services. Services are now 60% of the economy while agriculture is 13%. Industry is 27%.
2. Share in employment of services is 23.5% which is down from 24.5% in 1990-91.

2011-12

1. Agriculture growth: 2.8% (vs 7% in 2010-11).
2. Mining & quarrying: -0.9% (vs 5% in 2010-11).
3. Manufacturing: 2.5% (vs 7.6% in 2010-11).
4. Electricity, gas and water supply: 7.9% (vs 3% in 2010-11).
5. Construction: 5.3% (vs 8% in 2010-11).
6. Financing, insurance, real estate and business services: 9.6%. (vs 10.4% in 2010-11).
7. Community, social and personal services: 5.8% (vs 4.5% in 2010-11).
8. Trade, hotels, transport and communications: 9.9% (vs 11.1% in 2010-11).
9. GDP: Rs. 82 lac crores in 2011-12 (vs Rs. 70 lac crores in 2010-11).
10. Private final consumption expenditure (@ current prices): 56% (vs 56.5% in 2010-11).
11. Government final consumption expenditure (@ current prices): 11.7% (vs 11.9% in 2010-11).
12. GFCF (@current prices): 29.5% (vs 30.4% in 2010-11).
13. Inventory investment: 3.2% (vs 3.3% in 2010-11).
14. Per capita income (current prices): Rs. 60,000. Bank deposits: 17.4%. Bank credit: 19.3%.
15. RBI puts construction in services sector while CSO puts it in manufacturing. Typically CSO is followed.

Fiscal Stability

Statistics

1. After the FRBM Act, India did well to contain the fiscal deficit and had successively low fiscal deficit until it reached 2.5% in 2007-08. The in 2008-09 it was 6%, in 2009-10 it was 6.5%, in 2010-11 it was 5.1%, in 2011-12 it was 5.76% (against a target of 4.6%). Target for 2012-13 is 5.1%. Effective revenue deficit target for 2012-13 is 1.8%. The consolidated fiscal deficit of the Centre and the State governments for 2011/12 (RE) was 8.2 per cent of GDP.

Tax Statistics

1. Gross tax revenues of the center declined from 10.6% in 1990-91 to 8.5% in 1998-99 but increased from then till 2007-08.
2. Gross Tax/GDP = 10.1% in 2010-11, 10.0% in 2011-12 (10.4% estimated). 2012-13 estimates are 10.6% (19% growth over revised estimates of 2011-12). Gross tax collections declined from a high of 11.9% in 2007-08 to 9.7% in 2009-10. Estimates for 2013-14 are 11.1% and 2014-15 are 11.7%.
3. Revenue receipts for center have ranged between 7-11% so far. In 2011-12, they were 7.4%. Capital receipts have ranged between 4-7% so far. In 2011-12 they were 4.9% out of which 4.6% were borrowings.

Expenses Statistics

1. Total expenditure: 14.7% of GDP in 2012-13 (15.0% in RE 2011-12). Plan expenditure: 5% of GDP in 2012-13. Non-Plan expenditure: 9.5% of GDP in 2012-13. Transfer to states: 3.5% of GDP (out of which tax transfers are 2.6%).
2. Central government expenditure on social sector as a % of total central government expenditure has gone up from 13.5% in 2006-07 to 18.5% in 2011-12. Subsidies are to be kept @ 1.6% in 2014-15.
3. Net public debt is 49% of GDP in 2011-12 which is down from 59% in 2006-07. Estimated borrowings in 2012-13 is $96 bio. It is expected to decline to 42% in 2014-15.

Fiscal Deficit: Is it bad?

1. Expenses can be of two types - revenue (ignore maintenance ones) and capital. FD are financed by borrowings of monetization. Monetization impacts present generation only and can lead to serious price instability and loss of confidence in economy. Borrowings are preferred but they have to be paid out of taxes in future. So its like taking away a piece from future generation's pie. If this is used to create capacity which will benefit in future, it is acceptable provided the value so enhanced is more than the burden of additional taxes. If it is used to finance our current expenditures, it can lead to a situation where the future merges into present and the economy becomes unsustainable like in PIGS.
2. Even in capacity building expenditures, there can be social as well as economic capacity building expenses. While one can't say one is bad or good (both are essential), the idea is that the benefit created should be more than the cost. Typically in social projects, the outcomes are not measurable and they tend to fall victims to inefficiencies in implementation.

Q. In a supply constrained economy, how was it argued in India in the 1950s that deficit financing would help raise the growth rate? In hindsight analyze the validity of this view. (2010, II, 30)

GDP growth and interest rate argument

1. Interest rate should be equal to GDP growth, because that is how an economic agent is expected to earn. So if it is less than GDP growth, public debt can be increased and vice versa.
2. But for short period of times, it can't be said that the rate is < GDP growth rate so government should borrow more. This is because governments borrow over a long period and borrowings once initiated are difficult to cut back since government projects are long term projects. Its only when the government feels that GDP growth rate for a sustained period of time will be higher than the current interest rates that it may chose to borrow more.
3. Sustained growth rate can be achieved on back of sustained investment only. But if government borrows more and spends on consumption items, then it itself will compromise investment and hence the sustainability of growth.

FRBM Act

Statistics

Year.	Rev Deficit	Fiscal Deficit.	Rev Exp.	Capital Exp.
2003-04	3.6%.	4.5%.		
2005-06.	2.5%.	4.0%.	11.9%.	1.8%
2007-08.	1.1%.	2.6%.	12.0%.	2.4%
2008-09.	4.4%.	5.9%.	14.2%.	1.6%
2009-10.	4.6%.	6.6%		
2010-11	2.1%*	5.1%		
2011-12	2.85%*	5.76%		
2012-13	1.8%*	5.1%		
2013-14	1.0%*	4.5%		
2014-15	0.0%*	3.9%		

* indicates effective revenue deficit

Amendments

1. Effective Revenue Deficit: It is revenue deficit - grants to states used in capital formation. This will be made a fiscal parameter instead of revenue deficit. Effective RD will be eliminated by 2015, RD to be kept @ 2%.
2. 3 Year Rolling Expenditure Statements: Such statements will be laid out in the budget. It will contain expenditure commitment of major policy changes. It will also show contingent liabilities and provide a breakup of the grants used in creation of capital assets.

Advantages

1. Step in right direction.
2. If revenue account is balanced, long term accumulation to debt will slowdown. This is because (a) Government will not borrow for revenue expenditures. (b) Interest payments are revenue expenditures and hence need to be cut down. Debt accumulation would be to build up physical assets not to pay salaries and interest.
3. It places a limit of 0.5% of GDP on the guarantees which governments can give to the private sector for PPP projects. This is needed because these guarantees may place unaccounted future burden on fiscal deficit. It also limits additional liabilities to 9% in 2004-05 and reducing by 1% in each successive year. It also provides for disclosure of all guarantees, assets etc.
4. It provided for prohibition of central government from borrowing from RBI after 2006-07. This would also ensure better monetary policy mechanism.

Limitations

1. It is toothless. It also doesn't prevent government from slipping items under the line to project a fiscal deficit within bounds.
2. A good law must incorporate target which are comprehensive, difficult to override and must have substantial penalties on overriding. FRBMA doesn't have any of these characters. Also there will not be any incentive to push beyond the limits specified in FRBMA (since there are no advantages in doing it and it will only mean that the next government can "free ride") and thus in any downturn, FRBMA will be amended. Instead of such a rule, India should follow a counter cyclical budget process. To solve the free rider problem, FRBMA compliance should be monitored by an independent council involving major opposition leaders as well.
3. Wisdom of fixing 3% limit? There are some studies which suggest 6% as an appropriate limit including the recommendations of 12th Finance Commission. The rationale is Indian household financial savings is 13%. 5% is available to corporates, 2% in non-department undertakings leaving 6% for the government. But this argument is weak in the sense it applies only when the government debt is sustainable. Not when it reaches unsustainable stage. Copied from EU? India's debt is self-held and denominated in INR. India's savings rate is also higher which means higher capacity to absorb borrowings.
4. Wisdom of defining a hard rule for fiscal deficit at all. The limit of fiscal deficit which an economy can tolerate varies from situation to situation.
5. It suffers from the taboo that revenue expenditures are bad. Some of them are essential like maintenance expenses which are critical to life of project. So we should change our accounting system.

Indian Tax Structure

1. Direct Tax / Indirect Tax = 55:45.

2. Corporate tax: 38% > Personal Income Tax: 17.6% > Excise Duty (now called CENVAT): 17.5% > Customs Duty: 16.3% > Service Tax: 8.5%.

Q. Examine the role of indirect taxes in India's economic development. (2007, II, 20)

Centre-State Distribution

1. Only central: Custom duties, corporate tax, capital gains tax, wealth tax, surcharges, cesses.
2. Centre levies, state collects and keeps: Stamp duties on bills of exchange, cheques, promissory notes.
3. Centre levies, collects but state keeps: Estate duties, taxes on the stock exchange, and a central sales tax on newspapers, inter-state consignment of goods.
4. Shared between center and states: Income tax and excise duties.

Tax vs Surcharge

1. Surcharge is a tax on tax generally imposed to reduce ≠ further. Cess is a temporary levy on a tax for a specific objective.

Excise duty, MODVAT, CENVAT

1. Till 1986 excise duty was applied on goods before exiting factory gates but it amounted to double taxation as both inputs and outputs were taxed.
2. In 1986 it was renamed as MODVAT and now tax paid on inputs could be reclaimed. But this led to major compliance issues as different inputs attracted different rates and outputs as well.
3. So in 2000, a single rate was fixed and it was renamed CENVAT.

Chellaiah Committee Recommendations, 1991

1. Income Tax: Lower the income tax and corporate tax rates. Cap corporate tax rate @ 40% and abolish surcharges. Difference between tax on domestic and foreign firms should be <=7.5%. Capital gains when taxed should be indexed for inflation.
2. Wealth Tax: Tax only on non-productive assets.
3. Customs Duty: General fall in customs duty.
4. Excise Tax: Replace specific tax (fixed amount per unit) by advalorem tax.

Tax Reforms since 1991

1. Income tax, corporate tax, excise duties, custom duties etc. all rates have been brought down.
2. In 2001, a single rate if central excise duty called CENVAT introduced.
3. Service tax introduced in 1995. VAT introduced. Now GST in pipeline. Advalorem duties introduced.

Goods & Services Tax

13th FC on GST

1. It should be dual levy on a common and identical base imposed concurrently by the Centre and the States but independently to promote cooperative federalism.
2. It should cover all the goods and services. Exemptions should be minimum and common to the Centre and the States. Tobacco, petroleum products and alcohol should be taxed through GST as well as an additional duty with no input credit. Real estate sector should be integrated into GST framework by subsuming the stamp duty.
3. GST should be structured as a destination based tax. Inter-State transactions should be handled through a mechanism of permitting sellers in one State to charge SGST from buyers in another State. This SGST should be credited to the consuming State.
4. Keeping in view the compliance costs, small dealers and manufacturers should be exempted from the purview of CGST and SGST.
5. It recommended earmarking $10 bio to fund possible losses incurred by states over a period of 5 years. It also called for the subsumption of all indirect taxes, cesses and surcharges levied by the centre as well as the states into the GST.
6. No distinction being made between goods and services which would be subject to a single rate. A minimal list of exemptions and a common threshold criterion for the centre and the states.
7. To maintain revenue neutrality, a special provision to allow for petroleum products to be subject to an additional levy, apart from GST.

These recommendations did not find favour with either the centre or the states mainly for the following reasons:

1. The levy of a single rate was seen as both unrealistic as well as an attempt to crimp the fiscal autonomy of the states.
2. The inclusion of the real estate sector and the railways in the GST tax base was seen as not pragmatic.

115th Constitution Amendment Bill, 2011

1. It enables Parliament and state legislatures to make laws to levy GST which will be applied on all items except a negative list. It is needed to enable center to tax sales and enable states to tax production and services. It excludes items like alcohol, natural gas, crude oil, petrol diesel, ATF.
2. It sets up a GST Council comprising of FM and FM of all states. GST Council will work on consensus basis and will be a recommendatory body. Here is a clear contradiction since one of its mandate is to decide the goods where GST will not be applicable and also 6 such goods are already defined in ©.
3. It also sets up a dispute resolution body to oversee non-compliance of GST Council recommendations by centre and states. But here is a clear contradiction.
4. But it seeks to define the GST in © itself along with the exemption list which means that any change in future will need a © amendment. Also it allows the panchayats and municipalities to continue to levy tax on entry and this is seriously going to slow down and hamper the free movement of goods.
5. For GST we need uniform rates on goods and services. A 12% excise duty at manufacturing level is not the same as a 12% service tax at retail level.
6. The states panel decided to keep petro products out of GST so that states could levy their own taxes on them. But this would mean double taxation since it won't be possible to claim the GST credit on the inputs and still state taxes would have to be paid. So petroleum ministry has proposed to include it in GST and allow states to levy additional taxes. This is the international practice as well. Also exclusion of petroleum and alcohol means exclusion of a large category from the tax base. It should be included so as to prevent black money generation.

Issues Remaining in GST

1. State compensation issue: The centre has agreed to compensate states for 3 years starting from 2010-11 and has set aside Rs. 9000 crores for this in the budget. This has helped bridge the trust deficit issue. States want a $10 bio compensation package built into the 115 CA Bill.
2. While the SGST rate may be revenue neutral at the aggregate level, States with high tax effort may suffer a revenue loss.
3. IGST issue: It will be levied on the inter state movement of goods. GST will be based on the destination principle i.e. the state in which the goods/services are consumed will get revenue in respect of that transaction. Inter-State transactions should be handled through a mechanism of permitting sellers in one State to charge SGST from buyers in another State. This SGST should be credited to the consuming State. Issues remain for services where physical presence of the seller is not needed at the point of consumption, for instance when it comes to broadcasting, all the service tax will be paid in Mumbai or Delhi but the consumer is in states like Bihar also.
4. Dual control issue
    1. The forthcoming GST will be dual in nature i.e. the Centre will impose CGST while the state will impose SGST on the same transaction. The taxes proposed to be subsumed under CGST are Central excise duty, additional excise duties, excise duty under medicinal and toilet preparations, service tax, additional customs duty known as CVD and special additional duty, cesses / surcharges on goods and services. The taxes proposed for subsumation under SGST are VAT/Sales Tax, entertainment tax, luxury tax, tax on lotteries, betting and gambling, cesses and surcharges on goods and services, entry tax not in lieu of octroi and purchase tax.
    2. Dual control would mean a businessman will have to file the details of sales transactions with both the central and state, and may also have to take necessary license from both for the purpose of GST. Small businesses may find it very difficult to deal with two agencies for a single purpose.
    3. To get around this issue, it has been suggested that states collect both CGST and SGST, deduct their share and compensation amount and transfer remaining to the center.

The center has obviously rejected this citing this challenges the basic structure of the Constitution where funds flow from center to the states.

5. Rate structure
    1. States want flexibility in rate structure - instead of a single rate, they want a floor rate and a narrow band on top while allowing only two (standard or lower) rates within the band.
    2. They also want flexibility in the rate structure during emergency times like floods and droughts.

1. Dispute resolution body: They are against giving enforcing powers to the dispute resolution body and want it to be only recommendatory in nature. Instead of a supreme legislative body, if a dispute can't be resolved, judiciary may be approached.

State finance ministers have agreed to a system in which the Union government will levy a tax on inter-state movement of goods under the proposed goods and services tax (GST) regime and distribute the revenue to each state.
This comes after industry opposed a plan under which it would have had to approach state governments for refunds.
The states, however, are unlikely to reach an agreement on what should be the revenue neutral?tax rate (at which states will suffer no revenue loss) in GST when the empowered committee of state finance ministers meets on 19 September in New Delhi, according to government officials familiar with the situation.
The meeting will also discuss the report of the standing committee on finance on the constitution amendment Bill which was submitted last month. The proposal to amend the constitution, necessary for rolling out this unified indirect tax regime, is expected to be introduced in Parliament in the winter session.
GST aims to unify the country into a common market and remove inter-state barriers in movement of goods and services.
"States have accepted the industry's concerns on the compensatory value-added tax (CVAT) model. The centre and the states will further work on the IGST (integrated GST) model and ensure that states' concerns about revenue sharing are addressed,

Under the CVAT model, industry would have had to approach states for refunds instead of getting input tax credit on the state GST portion, fearing state governments may not give the refunds in time.

Direct Tax Code
Provisions

1. Earlier domestic companies paid @ 30% and foreign @ 40%. Now foreign companies to pay @ 30% as well but will have to pay additional 15% branch tax on profits attributable to their permanent establishments in India. All surcharges and cesses to be abolished. Most exemptions for corporates have been removed except for investment linked credit (cumulative profits up to the value of investment will be exempted) for certain sectors. Losses can be carried forward indefinitely. Income from different businesses will be separated.
2. MAT increased from 18.5% to 20% on book profits. Wealth tax now 1% on assets over Rs. 1 cr as against 1% on assets over Rs. 15 lac earlier.
3. The Bill specifically taxes any income from a "controlled foreign company" set up by Indian residents in a foreign country with the purpose of paying lower taxes.
4. Capital gains on assets where STT was charged was as follows: Long term (> 1 year): 0%, Short term 15%. Now it will be: Long term: 0%, Short term: 50% deduction and then tax @ marginal tax rate.
5. Capital gain on assets where STT was not charged was as follows: Long term (>3 years): 20% with indexation benefits, Short term: marginal tax rate. Now it will be: marginal tax rate (with indexation benefits) for both short and long term.
6. It introduces GAAR to allow IT department to classify any arrangement as one entered for evading taxes. It may increase compliance burden because there are no guidelines on what situations GAAR will be implemented.

Issues: Personal Income Tax

1. Total taxpayer base: 30 mm. Out of this 97% is (0, 10 lac) and contributes 25% of total personal income tax collected, 2% is (10 lac, 20 lac) and contributes 15% while 1% is > 20 lac and contributes ~60%.
2. So the parliamentary panel has proposed to raise the income tax exemption limit to Rs. 3 lac so as to avoid spreading out IT department's resources for too little.

Advanced Pricing Agreements

1. These are agreements between a firm and the taxing authority by which both agree to the tax liabilities arising out of transfer pricing for future periods as well. Its implementation has been brought ahead of DTC.

Q. Examine the progress of tax reforms in India. (2007, II, 20)

Inflation

Key Drivers of Infl ation
The rising prices of two product groups – primary articles and fuel – were mainly responsible for the build-up in headline infl ation after December 2009. Whereas, on an average basis, manufactured products recorded an infl ation of 5.63%, it was 12.12% and 11.46%, respectively, for primary articles and the fuel group (Table 1). Among primary articles, in terms of average infl ation, minerals (15.91%) were the largest contributor, followed by nonfood articles (12.48%) and food articles (11.43%). In the case of the fuel group, the rising prices of mineral oils were primarily responsible for the high infl ation

On an average, from December 2009 to August 2013, the egg, meat, and fi sh group has recorded the highest infl ation rate of 17.16%, followed by milk (11.78%), fruits and vegetables (10.84%), foodgrains (9.11%)

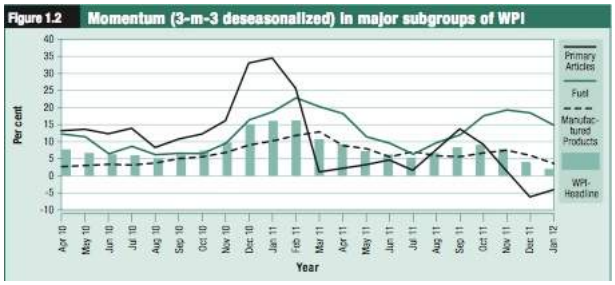
The high infl ation in minerals and mineral oils is due to factors such as fl uctuations in global crude oil prices because of political tensions in some parts of the world, the pass-through of increases in global prices of crude oil, domestic supply-side bottlenecks, and depreciation of the rupee. But what is perplexing is the persistence of an

upside risk to food price infl ation despite a favourable domestic food supply situation and low global food prices in recent years. One of the important factors held responsible for the spike in food infl ation since 2008 is supply-side constraints in the years 2008-09 and 2009-10 (Nair and Eapen 2012). However, a look at agricultural production from 2010-11 reveals that the food-supply situation in India has improved considerably (Table 3, p 14). The growth rate of output of all the major food commodities accelerated signifi cantly during the output cycle relevant to the period (December 2009 to August 2013) Hence, a weak supply response was hardly the cause for high food infl ation between December 2009 and August 2013.

This turns our attention to another key reason cited for soaring food prices – the growing demand for high-value agriculture products, in particular, proteinrich food items such as pulses, milk, livestock, and fi sh. 10. It is seen that the share of high-value food commodities – pulses, milk, egg, fi sh and meat – in total monthly per capita consumer expenditure (MPCE) on food at current prices increased in rural and urban India over the period from 2004-05 to 2011-12. On the other hand, the share of sugar, edible oils, and fruits and vegetables declined during the same period in both the rural and urban sectors. The percentage points increase recorded in the expenditure shares of pulses, milk, egg, fi sh, and meat in 2011-12 was not only signifi cantly different than in other periods, but also historically high, both in rural and urban. Moreover, except pulses, the expenditure shares of all these food commodities registered in 2011-12 were new highs. The total MPCE on food at constant prices also increased in this period. BUt this doesn't explain fruits and vegetables and cereal inflation. Another possible reason for stubborn food prices is the rising cost of production (Co P) of food commodities. With the exception of agricultural machinery and related inputs, the prices of various farm inputs, measured by the WPI infl ation rate, were subject to signifi cant increases in recent years. As for labour cost, a key element of farm input cost, 4 the agricultural labour wage rate (in nominal terms) grew at an average annual rate of 20% (CACP 2013) between 2009 and 2012 (January-December).

Trends

1. Inflation in minerals has been highest followed by fuel followed by food grains followed by manufactured products over past 2 decades. IIP in minerals has been growing @ 4.5% and manufacturing @ 10.5% since 2004-05 based on IIP indices. Naturally the prices of minerals will shoot up.
2. Inflation began to grow stubborn for the last 2-3 years @ 9%. Primary articles went up the most. Since January, the fall in food inflation has led to the narrowing between WPI and CPI. Core inflation which was 0.55% in Nov 2009 and 8.07% in April 2010 has since slowed down to 4.8%. 2 major contributors to CPI-IW inflation is food and housing.
3. M3 growth was ~20% in pre-crisis years. since then it has been falling steadily to 14.5% in 2011-12. Bank credit growth too has fallen secularly from 21% in 2006-07 to 14.4% in 2011-12.
4. GDP / M3 has been declining indicating higher price levels. It was 4.88 in 1951-52 and 1.25 in 2008-09. Inflation in India is broad based.
5. Long term trend: WPI inflation measured 1.7% in 50s, 6.5% in 60s, 9% in 70s, 8% in 80s. On the other hand the volatility of π which was high in 50s lowered down ins subsequent years. 90s saw initially a high rate of inflation in double digits followed by a moderation which lasted till 2003-04.
6. Trend in 2000s: Overall inflation in the decade was 5.3% and fuel inflation was 8.9%. Primary articles was 6.4% and manufactured products was 4%.



Steps Taken to Counter Inflation

1. Increasing Food Supply: Projects were followed to Bring Green Revolution to East India ($200 mm) and boost pulses production ($ 60 mm).
2. Agriculture Supply Chain: Farmers typically get only 20-25% of price paid by the consumer. To improve the supply chain, amendments to Agriculture Produce Marketing Committee Acts were proposed. Proposals for FDI in retail were mooted. While this will reduce the price gap between consumer and farmer, additional capacity will be created, business volume will go up and even small retailers will benefit. Additional PDS supplies given.
3. Trade Measures: Banned futures trading, exports, permitted imports, lowered import duty.
4. Monetary Measures: Interest rate hikes.

Q. Explain the nature and causes of inflation in India. Critically appraise the measures adopted by the authorities to control it. (2007, II, 60)

WPI

(a) Features

1. Recently weekly reporting of WPI food and fuel was abolished. This was because the weekly numbers were unreliable and had a tendency to be revised upward in the final monthly WPI numbers which included manufacturing as well. So there was a tradeoff between frequent but unreliable reporting and less frequent but more reliable reporting.

(b) Disadvantages

1. The basket was not reflective of items consumed by end consumer.
2. Services were absent which account for 60% of Indian GDP.

Private Final Consumption Expenditure Deflator
Advantage

1. It can capture the shifting consumption patterns and reactions of consumers to changing prices whereas normal CPI/WPI can't. Index value is 153 compared to CPI IW /RL index value of 175.

New CPI
(a) Changes

1. The new CPI has a base year of 2010 which will be shifted to 2011-2012 once the data for this period has been compiled. The old CPI-UNME had a base year of 1984-1985.
2. Unlike the CPI-UNME, which focused solely on the urban non-manual population, the new CPI provides data for urban, rural, and "combined" populations.
3. The new CPI measures more data. The old CPI-UNME listed one index for each of the five pricing categories (food, fuel, clothing, housing, and miscellaneous). The new CPI, however, includes more data within each of the five categories. For example, the "miscellaneous" category now includes subcategories of: education, medical care, recreation, transportation, personal care, and household requisites.
4. In addition, the new CPI provides an index for each of the 35 Indian territories/states as well as a general all India index.

(b) Features

1. Food weight in all India is 50%, rural is 59%, urban is 37%.

CPI New vs WPI

1. There are three key differences in the composition of the two indices.
    1. First, CPI-new has a much higher weight (47.6%) for food ex-tobacco versus 24.3% in the WPI.
    2. Second, fuel-related category has a lower weight of 9.5% in CPI-new compared to 14.9% in the WPI.
    3. Third, CPI-new includes services and housing, both of which are missing from the WPI.
2. Reason for divergence
    1. One is obviously higher weight of food. But it is not the sole reason.
    2. There is a significant difference in the core inflation measure of the two indices as well. Thus, while WPI-core inflation declined in March, CPI-new core inflation edged up. CPI new's core also include services.

Inflation Measuring Techniques

1. Laspeyer's index: $L = \sum(q0 \cdot pt) / \sum(q0 \cdot p0)$.
2. Paasche index: $P = \sum(qt \cdot pt) / \sum(qt \cdot p0)$.
3. Income index: $I = \sum(qt \cdot pt) / \sum(q0 \cdot p0) = yt/y0$.

Proof: If I > L, consumers are necessarily better off

1. $I > L$ means $\sum qt.pt > \sum q0.pt$. This means that the original basket was affordable in the current period, still the consumers are consuming a different basket. This implies the current basket is a superior basket.

Proof: If I < P, consumers are necessarily worse off

1. $I < P$ means $\sum q0.p0 > \sum qt.p0$. This means that in the original period, when the consumers consumed q0 basket, it used to cost more than the current basket qt. Still the consumers consumed q0. This means q0 is a superior basket and now the consumers are forced to consume only qt.

Medium and Small Enterprises

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Classification

1. Micro enterprises: Investment < Rs. 25 lac in manufacturing and < Rs. 10 lac in services.
2. Small enterprises: Investment < Rs. 5 cr in manufacturing and < Rs. 2 cr in services.
3. Medium enterprises: Investment < Rs. 10 cr in manufacturing and < Rs. 5 cr in services.

SSI Development: 1947 - 1991
Policies Before 1991

1. Organizational structure: A cottage industries board was setup in 1947. This ws split into 3 boards in 1st FYP vis handloom, handicraft and KVIB. Then SSI board, coir board and silk board came up. State Director of Industries is the nodal agency for SSIs. It operates through regional and district officers. Apart from it Small Industries Development Organization (SIDO) and a National Small Industries Corporation (NSIC) were setup for machinery procurement etc.
2. Neglect in FYPs: SSIs have never received any significant share in FYPs. Their share was 2.4% of plan outlay in 1s FYP and declined to 1% in 9th FYP.
3. Reservation policy: It is ad hoc and inconsistent and thus has served little purpose. The lengthening of list is not really inclusion of more products but just going into details. The purpose of allowing large industries captive production of items reserved for MSEs defeats the purpose of reservation. Currently there are only 20 items reserved for MSEs and even there large industries can produce for > 50% exports and captive consumption.
4. Financial assistance: Schemes launched in mid 80s to provide cheap capital. SIDBI was setup in 1989 to refinance, discount, lend directly, provide factoring services etc.

Weakness of Government Policies

1. Government schemes are complex and time consuming. Even for a simple assistance, MSE owners have to resort to expert opinion.
2. Large industries and MNCs are exploiting loopholes to indirectly operate in MSE sector. They are also exploiting loopholes to obtain fiscal benefits.
3. The core issue is labor laws and policy of hire and fire is needed.

Trends

1. Overall contribution: They produce 9% of GDP (3% rural MSMEs, 6% urban MSMEs) down from 11% in 1990-91, 60% of manufactured output, 40% of exports (30% in 1990-91). The

number of SSIs continue to grow. Currently there are 1.5 mm registered units employing 90 mm people (4th census 2006-07 year compared to 65 mm in 3rd census 2001-02 year). Number of unregistered units is estimated to be 25 mm. Roughly 60% are employed in handlooms, coir and village industries while 40% in industrial units.
2. Sectoral breakup: Overall food products units employ the maximum (14%) followed by non metallic mineral products (11%) and metal products (10%). In rural areas non metallic mineral products generates highest (23%) followed by food products (22%). In urban areas food products and metal products have almost equal shares (23%). They often act as ancillaries to main plants.
3. Export breakup: Garments, leather, gems and jewelry are leading export sectors.
4. Social contribution: They employ women, SC/STs. In NE more than 50% of the population in some states is engaged in SSI sector. Overall out of ~ 30 mm MSMEs, 42% are owned by OBCs, 8% by SCs, 6% by STs.
5. In 1951, GoI reserved thousands of items for MSMEs. This list had to be pruned down after liberalization and specially because of WTO commitments.
6. APPL has gone up from Rs. 50,000 to Rs. 150,000 at constant prices in past 2 decades. This coupled with better technology has pushed MSMEs up in the value chain.

Globalization and SSIs

1. Growth of public sector has declined considerably since 1991 and public sector had been a major buyer of the SSI products.
2. Increased FDI creates not only threats but also opportunities as it depends on outsourcing and ancillary industries.
3. Slowing growth: Growth of SSIs in 90s was lower than 80s in terms of employment as well as output. But it could also be a result of overall industrial slowdown. Share of SSIs today is 9% of GDP while it was 11% in 1990-91 and 9% in 1980-81.
4. SSIs don't have access to infrastructure. But after liberalization large industries have access. So SSIs lagging.

Debate 1 Are SSIs worth it?
(a) Yes

1. Employment Argument: They employ more labor per unit of capital. Rough numbers are in SSI, one person employed for Rs. 1.5 lac of capital vs 1 person for Rs. 5.5 lac of capital in organized sector.
2. Capital Intensity Argument: Though capital productivity is low, SSIs use domestic savings which are small and unlikely to be channelized into big industries anyways. However, this argument loses its appeal in light of increasing penetration of financial sector and ongoing financial inclusion projects.
3. Latent Resource Argument: There may exist some creative / alternate skills in labor which may express themselves only by the means of SSIs and would be lost in large scale industries.
4. Forex Earner Argument: They are big forex earners and in a developing country must be respected specially given our CAD.
5. Tax Revenue Argument: It is a myth that SSIs don't pay taxes. They are a major source of tax revenue for the government.
6. Regional dispersion argument.

(b) No

1. Employment Argument: Though they employ more labor per unit of capital, this labor is also less productive. But it is difficult to sustain this argument in face of the chronic unemployment problem facing our country.
2. Capital Intensity Argument: Capital is scarce in our country, so it must go in areas where its productivity is higher. But SSIs have higher capital productivity so this argument is weakened.

Q. What is your perception of the role of small scale and cottage industries in the present context of the Indian economy? (2009, II, 20)
Issues before MSMEs

1. Surviving in an economic slowdown as banks are not willing to lend to them.
2. Keeping pace with technological upgrades specially in industries where rate of obsolescence is high.
3. Changing demand patterns.

Credit

The Fourth Census of MSME sector revealed that only 5.18% of the units (both registered and unregistered) had availed of finance through institutional sources. While 2.05% had finance from non-institutional sources, the majority of units i.e. 92.77%, had no finance or depended on self finance.

17. This suggests that despite best efforts, the credit flow to MSMEs from the institutional sources is not commensurate with the economic activity undertaken by the MSMEs. Banks, on their part, lend a reasonable share of their credit to MSEs. As at the end of March 2012, the total outstanding credit provided by all Scheduled Commercial Banks (SCBs) to the micro and small sector (MSE) stood at Rs.5,242 billion as against Rs.4,785 billion in March 2011 and Rs. 3,623 billion in March 2010. Credit to MSEs has, as a percentage of the Adjusted Net Bank Credit of Public Sector Banks, increased from 9.5% in 2005 to 14.8% in 2011.
Credit information about a small enterprise is not as easily available, as it is for a larger firm, and it is not cost effective for the lender to collect information on all small enterprises. Nor have the small enterprises adequate collaterals to offer. The lenders, therefore, either refrain from lending or load the cost of information asymmetry into the lending rates. Another important factor is that risk assessment of smaller enterprises requires a separate set of tool as against the conventional tools, the absence of which is likely to dissuade banks from such lending. Further, smaller enterprises, in many instances, revolve around a single entrepreneur- *key man*- and lack good succession planning which discourages creditors to lend to such enterprises.

20. With an objective of ensuring provision of banking services in all parts of the country, banks were advised to draw up a roadmap to provide banking services through a banking outlet in every unbanked village having a population of over 2,000 by March 2012. The Reserve Bank advised banks that such banking services need not necessarily be extended through a brick and mortar branch but could be provided also through Business Correspondents with the aid of any of the various forms of Information and Communication Technology (ICT) - based models.

21. Further, based on the recommendations of the Working Group (Chairman: Shri V.K. Sharma, Executive Director, RBI) constituted by the Reserve Bank of India to review the Credit Guarantee Scheme (CGS) of the Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE), the limit for collateral free loans to the MSEs has been increased from the level of Rs. 5 lakh to Rs.10 lakh and has been made mandatory for banks

22. Timely detection of sickness is critical for any enterprise as any delay in this regard impinges on the revival prospects of sick, but potentially viable, units. In order to speed up the process for identification of a unit as sick, a proposal for modifying the extant definition of sickness, in line with the recommendations of the Working Group on Rehabilitation of sick SMEs set up by Reserve Bank of India, is under consideration of the Government of India and the Reserve Bank of India.

23. All Scheduled Commercial Banks have also been advised to review and put in place MSE Loan policy, Restructuring / rehabilitation policy and Non-discretionary One Time Settlement Scheme for recovery of non-performing loans, duly approved by their Board of Directors.

24. To address the complaints received from various industry Associations/Chambers that banks are not acknowledging their loan applications, all banks have been mandated to acknowledge all loan applications, submitted manually or online, by their MSME borrowers and ensure that a running serial number is recorded on the application form as well as on the acknowledgement receipt.

29. Credit ratings provide lenders with the information about borrowers' creditworthiness and enable them to take more efficient credit decisions. Borrowers with high credit ratings benefit by way of favourable borrowing terms such as lower collateral requirements, reduced interest rates, simplified lending norms and faster access to credit by banks and financial institutions. Reliable credit ratings, thus, facilitate availability of credit more easily and at fair cost. Ratings can also serve as a powerful self-improvement tool for SMEs and help them strengthen and fine-tune their operations. It is, however, generally observed that a vast population of MSMEs still remains unrated. With a view to encourage entities to get themselves rated, part reimbursement of rating fees is also being provided through National Small Industries Corporation (NSIC).

Access to Capital

Equity:

30. Equity forms an important constituent of MSME's financing avenues given the peculiarity of their business model. Most MSMEs, particularly the knowledge based enterprises, which, when starting off, have negative cash flows and no collateral and, therefore, find it difficult to access debt capital or bank financing. Venture /Risk capital is often a more appropriate financing instrument for high-growth-potential and start-up SMEs. Firms typically look for venture capital to provide them with the financing they need, to expand, break into new markets and grow faster. Thus, the ability of MSMEs (especially those involving innovations and new technologies) to access alternative sources of capital like angel funds/risk capital needs to be enhanced considerably to encourage and develop entrepreneurship. In the Union Budget 2012-13 the Finance Minister has announced to set up a Rs.50 billion India Opportunities Venture Fund with

SIDBI to enhance the availability of equity to the MSME sector.

Factoring Services

Case of Handicrafts Industry
Condition

1. Handicrafts exports halved from $3.5 bio in 2007 by 2010. The projections in 2007 were for $6 bio by 2010. This sector is the second largest employer (7 mm) in rural India after agriculture. Most of the artisans are socially marginalized sections.
2. Indian handicrafts were neglected till 1980s after which efforts were made to increase exports. It paid off and exports steadily rose till 2007.
3. 85% of the artisans are concentrated in UP, Rajasthan, Gujarat and NE states.

Reasons

1. Lack of market diversification: Major export markets are still traditional developed markets where growth has faltered. Handicraft industry was not able to diversify its market base like others and hence has suffered. Handicraft products count as a luxury product there.
2. Low productivity / Lack of capital formation: Despite lack of cultural diversity, China's handicraft exports are more than double to that of India and is expected to grow exponentially while India's stagnate. This is attributed to high productivity of the industry in China.
3. Inefficient supply chain: The ultimate handicraft producer gets only minimal of his product's worth and bulk of the rewards are creamed by intermediaries who have no incentive to invest in the business due to the industry structure.

Government Initiatives - Post 1991
New Economic Policy, 1991

1. Institutional reforms: To provide equity participation up to 24% by other undertakings into MSEs in order to provide capital access. To introduce limited liability legislations for MSEs.
2. Financial reforms: To provide timely and easy loans through single window clearance. To introduce factoring services to resolve the problem of late payments.
3. Marketing reforms: To form cooperatives for market promotion.
4. Reservation reforms: To give priority to MSEs in government procurement. To accord priority to MSEs in allocation of raw materials.
5. Technology reforms: To encourage quality certification and technology upgrade.

SSI Policy, 2003

1. Focus remained on reservations. However, such protection was not applicable for SEZ, EPZ or EOU.
2. Limits were upgraded for SSI protection.

Nair Committee Report on MSMEs, 2009

Public Procurement Policy for MSEs

1. Each department / PSU to earmark 20% of its total purchases from MSEs in next 3 years. 4% will be reserved for SC / ST MSEs. Each department will have to put the target and achievement in its annual report and non conforming departments will have to give reasons for their failure.
2. In any tender, the participating MSEs quoting within L1 + 15% range will be given an option to match L1 and supply 20% of the order.

Budget 2012-13 Proposals

1. Loan waiver of $750 mm to textile workers.
2. Setting up of mega clusters for hand looms and power looms.
3. Setting up SME exchanges to provide capital market access to SMEs.

Credit Guarantee Trust Fund for MSEs (CGTMSE)

1. CGTMSE is owned by the Government of India and Small Industries Development Bank of India (SIDBI).
2. In 10 years, CGTMSE has approved an amount of $8 bio in 2012. In the past 5 years, the amount of guarantees approved has been impressive. It provides guarantees without collateral for up to Rs. 1 cr.

Credit Linked Capital Subsidy Scheme

1. This assistance is for MSEs to adopt new technologies. It is a part of PMEGP.
2. A capital subsidy of 15% of the plant value is provided on loans up to Rs. 1 cr will be given for technology upgrade.

Cluster Development Programme

1. In the cluster approach, soft interventions (technical assistance, market development), hard interventions (creation of tangible assets) and infrastructure development will be undertaken in the clusters.
2. In each cluster, common facility centers will be setup which will consists of expensive tools which would be rented to the SSIs. But this is a gateway to corruption. Better is to increase the SSI limit.

Marketing Assistance Scheme

1. Its aim is to enhance the marketing linkages of MSME to provide them a platform for interaction with the buyers and to resolve their grievances.
2. The focus is on organizing national and international fairs.

Rajiv Gandhi Udyami Mitra Yojana (RGUMY)

1. Its aim is to provide support to people going through the government skill development programmes.
2. A toll-free number is in operation to provide information and support.

12th Plan - The Game Changer Approach
This is in line with MSME Development Act, 2006 and National Manufacturing Competitiveness Programme, 2009.

1. Finance: Operationalisation of SME exchanges for enabling access to equity finance.
2. Technology: Scheme for acquisition and up-gradation of technology.
3. Infrastructure: Developing clusters and 100 Tool Rooms.
4. Marketing: Procurement policy for goods/services and B2B international portal.
5. Skill Development: Revamped Skill Development & Capacity Building Programme and upgrading PMEGP.
6. Institutional Structure: Strengthening of Institutions like KVI and making regulatory framework simple.
7. An Umbrella Scheme would be setup covering individual schemes in each subheading.

Scheme for Integrated Textile Parks

1. The government has sanctioned 21 new textiles parks for greenfield investment under the Scheme for Integrated Textiles Parks (SITP).
2. The SITP seeks greenfield investments in the textiles parks with the objective of setting up infrastructure for textiles industry on a PPP basis.
3. If they are started under a SEZ the provisions of that SEZ will apply else the ITP can apply for being a SEZ.
4. The state governments will be responsible for land acquisition, water, utility supplies etc.

International Initiatives

1. MoUs have been signed with Egypt, Botswana, Korea, Mozambique and Indonesia in last 3 years.

Prime Minister Employment Generation Programme

1. It is a credit linked subsidy programme. General beneficiaries in urban areas get 15% of project cost as margin money subsidy and 25% in rural areas. Special category get 25% and 35% respectively.

Jute Industry
Pre-Independence
Nature & Character

1. It was localized in Bengal.
2. It was an export oriented industry. Earlier raw jute was exported and in 20th century jute products exported to US and Germany. It was developed to serve foreign interests.
3. India had jute handlooms, but due to colonialization of economy, they were killed and raw jute was exported instead. In 19th late century, mills came up. Due to rising cost of labor, £ lost their comparative advantage and mills came up in Bengal.
4. Till WW1, bulk of the capital was £ capital which was invested through Indian Jute Mills Association which also controlled the output to maintain high prices and also paid low prices to the farmers. From 1920s the Indianization began first by buying stocks and lending money, many marwaris got themselves elected to the boards of these european managing agencies and next some Indians like Birla themselves opened jute mills. But the industry remained a monopoly of a few houses only.

Post-Independence
Scenario @ Independence

1. Jute producing areas went to Bangladesh, mills remained in India.
2. Most of the mills were with outdated equipment, old management style and labor issues.
3. The state policy encouraged jute cultivation and soon area lost to Bangladesh was made for.

Current Problems

1. Stagnation in area under cultivation. Has declined from 1961s. The production of raw jute has remained stagnant in last 20 years as well. Jute has to be imported from Bangladesh, Philippines.
2. Outdated technology, excess capacity, labor issues and outdated management style. Jute industry in India is sick.
3. Challenge from synthetic products.

National Jute Policy, 2005

1. To raise jute yield per hectare.
2. To increase real wages of jute workers and protect real income of jute growers by MSPs.

Jute Technological Mission, 2006

1. To transfer technology from laboratory to land and from land to mill.
2. To develop forward marketing linkages.
3. To modernize plant and machinery.

Cotton Industry
Pre-Independence
Nature & Character

1. Regional concentration in Bombay and Ahemdabad. Raw material proximity, industrial finance, port for import of machinery.
2. It started as a result of accumulation of capital by merchant classes indulged in overseas trade. € managing agencies were employed. They arranged for technologies and finances.
3. WW1 changed the picture as the import of £ goods declined and a protective duty was also imposed. Swadesi also helped.
4. Labor remained a challenge. The importance of jobbers and support of workers to him made his position strong. Workers were strong union. £ government's factory acts and trade union acts also increased problems.

Post-Independence
Situation @ Independence

1. It got a favorable state policy. It got customs duty protection, restrictions were removed on internal businesses.

Current Condition

1. Mills account for 10% of the production (down from 80% @ independence), power looms do 80% and hand looms do 10%.
2. The sector contributes 11% of the industrial production, 14% to the manufacturing sector, 4% to the GDP, 12% to the exports and employs 18% of the industrial sector employment.
3. Maharastra (40%) an Gujarat (35%) are the main cotton textiles producing states.

Current Problems

1. Preferential policies towards looms and handicrafts lead to disadvantage for mills.
2. Lack of technological upgradation, infrastructure, linkages.
3. Labor laws are issue.
4. Cotton price volatility: highest in past 150 years. As a result out of 287 companies listed on BSE, 122 have shown losses in 2011-12. Long staple cotton has to be imported from Egypt. Textiles sector operates in low single digit margins and any fluctuation in cotton prices hits them hard.
5. Erratic power supply.

Debt Restructuring Package, 2012

1. Total outstanding debt to textiles sector is $35 bio (~4% of bank's credit to industry) out of which $7 bio will be restructured. Also a 2 year moratorium on loan repayment is proposed.
2. Losses of cotton mills were enlarged by the volatility in cotton prices which hit record highs in March - April 2011 before crashing as the output from cotton producer countries including India and Pakistan rose to a record.
3. As a result of this restructuring exercise, mills will get much needed liquidity. They would be able to increase their capacity utilization from 70-80% to 90-95%. This would mean an increase in demand for cotton. Currently they are buying 22 mm bales per annum (as against a production of 35 million bales and yet we banned cotton exports!).

INTEGRATED PROCESSING DEVELOPMENT SCHEME (IPDS)

- The Cabinet Committee on Economic Affairs has approved the launching of a new Integrated Processing Development Scheme (IPDS) with a total cost of Rs. 500 crore during the 12th Five Year Plan.
- The main objective is to establish four to six brown field projects and three to five green field projects addressing the environmental issues faced by Textile Processing Units.
- The eligible projects under the scheme would cover the following:
  - Common Effluent Treatment Plant (CETP).
  - Captive power generation on technology preferably renewable/green technology
  - Infrastructure such as storm water management, necessary roads and pipelines for water & wastewater and
  - Facility for testing and R&D centres.

Woolen Industry
Current Situation

1. Punjab > Maharastra > UP.
2. India imports wool from Australia.

Silk Industry
Current Situation

1. India ranks behind China in silk production. AP > Assam > Bihar.
2. In textiles, Karnataka is the leading producer followed by W Bengal, AP, TN.

12th Five Year Plan

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Targets

1. They are growth and inclusion. Gros a consumption driven economy. So it will not be impacted much by global slowdown. But this is incorrect because the marginal growth India is generating is export led.

1. The consumption is projected to actually decline as a percentage of GDP and savings to rise. This additional savings has to serve the exports.

Target for Capital Accumulation

1. wth target is 9%. 11th Plan target was 9% as well and actual growth was 8%.

Growth
Comes from Capital Growth, Labor Growth & Total Factor Productivity Growth.
Capital
Importance of Global Factors to Growth

1. It is sometimes argued that India i

1. The target for GFCF is 36% (current 30.5%) to achieve a 9% GDP growth. At this level the GDCF is expected to be 40% with 37% contribution from domestic savings and 3% from current account deficit.
2. GDS at the end of 11th Plan is expected to be 35% whereas actual was 32%.

Labor
Importance of HR Development in the context of growth

1. India's mean schooling is 5.12 years which is similar to what China had in 1985 before it embarked upon a sustained 10% growth path.
2. Currently ~ 90% of labor force receives training on work only which is just not consistent with the sustained high growth target. The target is to train 60 mm individuals in the 12th Plan. A report by National Skill Development Corporation says that the 21 high growth sectors will need 350 mm skilled workers by 2022.

Total Factor Productivity Growth (TFPG)

1. India has been witnessing increasing growth coming from TFPG (some studies put it at 3.7% now).
2. But TFPG tapers to zero as an economy moves closer to the production possibility frontier. But India is estimated to be far from the PPF.

Critical Challenges to Growth

Funding the Growth

Sl No	Description	2011-12 (BE)	XIIth Plan Average
1	Tax Revenue Net to Centre	7.40	8.68
2	Non-Tax Revenue	1.40	1.01
3	Non-Debt Capital Receipts	0.60	0.41
4	Fiscal Deficit	4.60	3.25
5	Aggregate Resources (1+2+3+4)	14.00	13.34
6	Non-Plan Expenditure	9.09	8.09
7	Gross Budgetary Support for Plan	4.92	5.25
7a	Central Assistance to States/ UTs	1.18	1.23
7b	Central Plan	3.74	4.02
8	IEBR	2.86	2.84
9	Plan Resources for the Centre	6.60	6.86

The Funding Gap

1. Target fiscal deficit is 5.5% in 2014-15 (3% for centre and 2.5% for states). But this was based on assumption that the central deficit would be 4.6% in 2011-12. Actual deficit was 5.75% i.e. an overshoot of 1.15%. Thus while the original planned reduction in fiscal deficit was 1.7% (1.6% for centre and 0.1% for states) over 3 years from 2010-11 levels out of which 0.5% reduction was supposed to be achieved in 2011-12 itself now it has to be 2.85% (2.75% for centre and 0.1% for states).
2. The planned expenditure on education and health is targeted to go up by 2% of GDP, expenditure on critical infrastructure by 0.5% (thus total increase 2.5% under these heads).
3. The overall increase in Planned Expenditure Target is 1.5% (GBS for the Twelfth Plan is projected to increase by about 0.85% from 4.9% in 2011-12 to 5.75% by 2016-17 => (a) expenditure under other planned heads has to go down by 1%. (b) since deficit has to be reduced by 2.85% and planned expenditure increased by 1.5%, a gap of 4.35% occurs.

Funding the Gap - Revenue Side

1. For the Planning Commission's estimated 3.7% gap (based on 5.1% fiscal deficit in 2010-11) it was expected that 2% would be met by revenue increases (Net tax revenue for the Centre is expected to increase by 1.5%, from 7.40% in 2011-12 (BE) to 8.9% in 2016-17. Non-tax revenues are expected to fall from 1.4% in 2011-12 to 0.9% in 2016-17) and 1.7% by reduction in non-plan expenditure (Decline in non-Plan expenditure from 9.1% in 2011-12 to 7.4% in 2016-17. Subsidies projected to decline from an estimated 2% in 2011-12 to 1.25% in the final year). Now additional 0.8% gap is there.
2. If the global slowdown persists, given that the marginal growth is coming from exports, revenue collections may be lower and additional money will have to be spent.
3. For the 2% increase in revenues, Goods and Services Tax is important.

Funding the Gap - Expenses Side

1. Subsidies on food = 0.7%, fertilizers + fuel = 1.3%, electricity = 1%. Food subsidies are going to increase given the commitment for national food security. So this means a substantial reduction is needed in fertilizer, fuel and electricity subsidies.

Agricultural Policies

Agricultural Reforms

1. The target for Agricultural growth is 4%. The focus areas for this growth are horticulture, fisheries and dairying since the production of food grains is unlikely to jump frog. For the development of these perishable products, logistics reforms are very necessary - this is where FDI in multi brand retail comes into picture.
2. The Agriculture Produce Marketing Acts in many states prevent the private sector buyers from directly dealing with farmers. These acts continue because of the vested interests who control the mandis where peasants have to sell their produce.
3. As land holdings become small, marginal farmers prefer to lease out their lands and work as laborers. But the lease laws in states tend to favor the tenant, hence they are unable to do so.
4. There is too much focus on delivering subsidies without bringing about a change in production processes and reducing the farmers' dependency on subsidies.

Inflationary Pressures

1. The target is 4% of agricultural growth. Such a rate has never been achieved since last 3 plans. At 3.2% growth there was so much of pressure on the prices. At 4% what will happen?
2. There would be a move to reduce agri-subsidies. So the input costs would go up. In such a case, how would it be possible to increase output (by 4%) unless food prices also go up?

Employment Generation

Labor Reforms

1. The growth target for 12th Plan is 9%. If agriculture growth is 4%, then a feasible growth target for manufacturing and services is 11% and 10% respectively.
2. MSMEs can be an effective tool to achieve the growth target and generate employment so the policy environment should help them. But not by ad hoc subsidies, but by laying down good infrastructure and helpful legal-institutional environment.
3. To achieve the said manufacturing growth, there is a need to rationalize labor laws. (NIMZ can help create pockets of investor friendly regimes)

Limitations

1. The Plan targets manufacturing growth of 11%. National Manufacturing Policy targets manufacturing growth of 14%.

Infrastructure Development

1. Infrastructure investment was 5.6% of GDP in 2006-07 and is likely to be 8.5% in 2011-12. The target for 2016-17 is 10.5%. This calls for trillion dollar expenditure as against half that amount in 11th Plan.

Funding Infrastructure Development

1. PPP mode has to finance 50% of the total expenditure as against 30% in the 11th Plan. Viability gap funding has been extended to irrigation, agricultural markets, fertilizers production, telecommunication towers and fixed network, oil and gas pipelines and storage facilities to encourage PPP.
2. Financial sector needs to be strengthened and for this financial reforms are needed. Hence the need for pension fund reforms, increasing FDI from 26% to 49%, modernizing bankruptcy proceedings, making shareholder voting rights proportional to their holdings in banks instead of capping it to 10%. Infrastructure Debt Funds are being setup, tax-free infrastructure bonds worth $6 bio were offered in 2011-12 and $12 bio in 2012-13. Power projects can now raise funding via ECB mode to refinance their INR loans with up to 40% of

their proceeds (up from 25% earlier). Withholding tax rate on ECBs lowered from 20% to 5% for infrastructure sector. Aviation can raise ECB up to $ 1 bio ($300 mm individual company limit).
3. External investments are being sought in DMIC projects. Japan has promised to invest $4.5 bio picking up 26% stake in DMIC Development Corporation, Qatar is interested.
4. Corporate bond market needs to be developed. The main reasons for poor corporate bond markets are archaic bankruptcy laws and long bankruptcy proceedings. So reforms are needed in this space.
5. Size of the banks needs to be increased. In budget 2012-13, $3 bio were set aside for recapitalization and creation of a finance holding company to fund bank recapitalization was proposed. But given paucity of government funds, "alternative" ways of maintaining state control need to be explored despite state's holding falling below 50%. (Isn't this inconsistent with financial reforms?)

Implementation Delays in Infra-projects

1. These delays occur mostly because of land acquisition and environmental clearance issues. Hence the need of Land Acquisition Bill and making environmental clearance more rule based instead if discretion based.

Additional Limitations

1. The move to mess with funds of PSUs will distort the corporate governance practices in India and will naturally impede the development of corporate bond markets.

Energy

Clean Energy Policy

1. As per Planning Commission, energy intensity needs to be reduced and for this (a) energy prices need to be rationalized and (b) regulatory framework needs to be created.
2. Standards for buildings need to be set and implemented. (Significance of Energy Conservation Buildings Code) Most of the commercial buildings to be in place by 2030 are still to be built, hence significant progress can be a chieved by regulating the new buildings alone.
3. Cesses should be imposed on conventional fuels to pay for clean technologies.

Limitations of the Clean Energy Policy

1. Planning Commission doesn't seem to have incorporated the impact of a future global pact on carbon emissions reduction. It is still talking about reducing energy density when there may be legally binding cuts.
2. If energy prices are so rationalized, won't it put additional pricing pressures? And how do we plan to counter the pricing pressures coming from adoption of cleaner technologies?

Energy Sector Reforms

1. India is likely to face a shortfall of 250 mm tonnes of coal in 12th Plan. This is despite having one of the largest coal reserves. The reason is archaic policy.
2. Private players need to be given incentives to mine coal as CIL doesn't even have plans to meet up the domestic demand.

Managing Water Resources

Water Supply Management Reforms

1. Until recently, official studies showed the total available supply of water to be well above the total demand. But the latest one shows both are roughly matched and the situation is likely to worsen as GDP grows.
2. So on the supply side, cost effective solutions need to be devised like watershed management projects instead of big dams.

5.3 Satellite data reveals that there has been a decline in the ground water level of 4 centimetres each year between 2002 and 2008 in the alluvial tracks of Northern India where natural rates of recharge are high. This is equivalent to an increase in over 70.0 per cent in the rate of water extraction compared to the previous decade. The decline in the water table is also evident in the crystalline, volcanic and mountainous regions that account for nearly 70.0 per cent of our landmass where natural rate of ground water recharge is very low.
Over the last several years, many rural habitations have been provided drinking water supply. However, the number of 'slipped back' habitations has increased every year because the same aquifer is also being tapped for irrigation. This has also led to wetlands and rivers drying up due to reduction in base flows, which had earlier sustained them. The lowering of water tables has also caused, in many cases, contamination with arsenic, fluoride and other harmful substances.

Aquifer Mapping
5.9 Since groundwater is the main source of water in India, special emphasis is needed on obtaining an accurate picture of groundwater resources, including a comprehensive mapping of our aquifers at a watershed scale, with their storage and transmission characteristics. Our current network of around 60,000 observation wells is completely inadequate given the explosive rise in groundwater use in recent years through nearly 30 million groundwater structures. During the Twelfth Plan, we need to move from a ratio of 1: 500 at present towards a ratio of at least 1:100 between observation wells and groundwater use structures so that we gain a more accurate idea of actual groundwater use.
Stakeholder Aquifer Management
5.10 Based on the aquifer mapping exercise, we need to develop sustainable groundwater management plans for each aquifer. This requires action on the ground involving partnerships of stakeholders at the village-level with hydro-geologists and social mobilizers who would guide collective sharing and sequential use of groundwater based on a careful understanding of the storage and transmission characteristics of different aquifers in each of the hydro-geological settings outlined in the MTA of the Eleventh Plan.
Sustainable Management of Natural Resources 47
Promising work on a reasonable scale has started in this direction in Andhra Pradesh. The Andhra Pradesh Farmer Managed Groundwater Systems (APFAMGS) project is supported by the Food and Agriculture Organization and implemented by NGOs in seven drought-prone districts of Andhra Pradesh. The project employs participatory hydrogeological monitoring, by engaging farmers in data collection and analysis, and building their understanding of the dynamics and status of groundwater in local aquifers. This is complemented with crop water budgeting whereby the quantity of water required for crops is assessed at the aquifer level and compared with the amount of groundwater actually available to arrive at a suitable cropping pattern that would permit sustainable groundwater use. The total outreach of the program is estimated at 1 million farmers. Such initiatives need to be undertaken at many more locations in the Twelfth Plan.

Water Demand Management Reforms

1. Currently the pricing of water only recovers 15% of the running costs. This leads to (a) neglect of the irrigation infrastructure, (b) unreliable water supply to farmers and (c) lack of private sector participation in irrigation infrastructure and hence underfunding.
2. Current groundwater management laws only provide a ban on drilling new tube wells in the areas where the water table has fallen too low. But this gives a free run to wells already existing and sometimes they get free electricity to do so. So water needs to be priced properly and cess should be imposed on groundwater use which can be used to recharge the water table.
3. If water can be made available to farmers in a timely and assured manner, then they can adopt newer agriculture technologies which will promote efficiency.
4. 5.17 Another step that helps improve both the power situation and revive groundwater is the separation of agricultural feeders, which enables villages to get 24 X 7 three-phased power for domestic uses, schools, hospitals and village industries while farm pump-sets, which require much more power, obtain eight hours or more of quality power on a pre-announced schedule. .21 Most Indian cities today spend anywhere between 50.0–70.0 per cent of their water supply finances

on electricity to pump water. As the distance increases, the cost of building and then maintaining the water pipeline and its distribution network also increases. If the network is not maintained water losses increase. Today, municipalities officially report anywhere between 30.0–50.0 per cent of the water supplied as 'lost' in leakages. It would be far more efficient to revive traditional and local water bodies which also help recharge groundwater.

5. Use of water by industry and urban areas needs to be made much more efficient. This requires reducing dependence on fresh water, especially groundwater (which is increasingly being over-exploited across the country) and ensuring safe disposal of waste. A major hike is required in investments in water recycling or waste-water treatment, which would simultaneously help reduce dependence on fresh water and make a positive impact on water quality. In the long-term such an investment would pay for itself and would be more cost-effective than the current practice of extracting groundwater or transporting water over long distances. It would also, of course, help reduce the cost otherwise borne by society because of polluting industries.

Urban Reforms

1. Most of the revenues are generated from cities, but they get devolved onto state and central governments.
2. Since urban population in India will become 40% by 2030 from current 30%, there is a need to reform and empower the municipal bodies.

Economic Inclusion

1. Poverty: 11th FYP target: 2% p.a. Actual 1.2% p.a. but this is higher than previous plans. Also the rate of decline was higher in closing years of the Plan.
2. Farm wages: During the period 2007-10, the average real farm wage rates increased by 16.0% at the all India level. The growth was the fastest in Andhra Pradesh (42%) and Odisha (33%), Bihar (19%) and Uttar Pradesh (20%).
3. Regional distribution: High rates of economic growth have been more broadly shared than ever before across the States. Several of the economically weaker States have demonstrated an improvement in their growth rates.
4. Employment: Between 2004-05 and 2009-10, the overall labour force expanded by 12 million while 18 million job opportunities were created on current daily status basis. The unemployment rate which had increased from 6.06 per cent in 1993-94 to 8.28 per cent in 2004-05, came down to 6.60 in 2009-10. But NSSO data shows vast majority of new jobs created between 2004-05 and 2009-10 was in casual employment, mainly in construction.
5. Demographic dividend: The labour force in India is expected to increase by 32% over the next 20 years, while it will decline by 4% in industrialized countries and by nearly 5% in China. NSSO 2009-10 shows that the number of young people in education, and therefore, out of the workforce, has increased causing a drop in the labour participation rate. The total number of young working-age (15-24) people who continued in educational institutions doubled from about 30 million in 2004-05 to over 60 million in 2009-10. The result was lower expansion of 12 mm only in labor force. But this will increase when the educated come back in the labor force.
6. Education: For the age group 6–14 years, rural children non enrollment has dropped from 6.6% in 2005 to 3.5% in 2010. Envisaging universalization of secondary education by 2017 should be a priority in the Twelfth Plan. The current "not-for-profit" prescription in the education sector should be re-examined in a pragmatic manner. In higher education minimum standards need to be ensured but free entry will weed out the poor quality institutions.

Health

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CD8T

- Scientists found that the people who evade severe flu illnesses had more CD8 T cells in their blood at the start of the pandemic.
- CD8T cells are **a type of virus killing immune cell**.
- They concluded that a vaccine which can stimulate the body to produce more of these cells could be effective at preventing flu viruses, including new strains that infect humans from birds and pigs.
- The specific quality of CD8T cells which renders it the potential to kill different strains of flu viruses is that it attacks the core of the virus unlike normal antibodies which target the surface of a virus.
- The flu virus rapidly changes its surface which makes older vaccine less effective. However, CD8T cells attack the core of the virus which remains the same. So, even if the virus changes its outer structure it would not affect the potential of CD8T cells to target them.

Why is it in news?

- A team of researchers led by Professor Ajit Lalvani from the National Heart and Lung Institute at Imperial College London have discovered this new way of combating viral flu infections.
- He has developed a roadmap to develop universal flu vaccine.

JENVAC

- India launched its **first indigenous vaccine to** protect children from **Japanese encephalitis**. Until now, the country has been importing the vaccine from China.
- The Vero cell-derived purified inactivated JE vaccine–JENVAC is the first vaccine to be manufactured in the public-private partnership mode between the Indian Council of Medical Research and Bharat Biotech.
- The vaccine will provide increased immunogenicity and long-term protection as a result of unique manufacturing technologies.
- Japanese encephalitis, a mosquito-borne viral infection, is the most common cause of viral encephalitis in eastern Uttar Pradesh (U.P.), affecting 171 districts and claiming hundreds of lives every year.

Statistics

1. Birth Rate: 2.2, Death Rate: 0.6, Natural Growth Rate: 1.6. Infant Mortality: 47, MMR: 212 per 100k, total fertility rate 2.6 (expected to decline to 2.3 by 2015). Institutional deliveries increased from 55% in 2004-05 to 75% in 2009-10.
2. Infant mortality: It is number of deaths < 1 year age per 1000 live births. Pneumonia is the largest cause of such deaths.

- **Immunisation cover is far from being universal:-**
Full immunisation in children has improved from 54.5 % in 2005 to 61 % in 2009 during the 11 th Plan. Additions to the Universal Immunization Program include Hepatitis B, Japanese Encephalitis (JE) vaccine in endemic districts, and Pentavalent vaccine, which is a combination vaccine against Diphtheria, Pertussis, Tetanus, Hepatitis B and Haemophilus influenza B.

There has been no reported case of polio during 2011.
However, Immunisation cover is far from universal as envisioned in the 11 th Plan, and remains particularly low in UP (41 %), MP (43 %), Bihar (49 %), Rajasthan (54 %), Gujarat (57 %) and Chhattisgarh (57 %), Assam (59 %) and Jharkhand (60 %).

Government Initiatives

Drug Price Control Order, 2013

Provisions

1. It replaces DPCO, 1994.
    1. The order contains list of about 348 essential drugs and formulations whose price is subject to control under the order. The list includes commonly used medicines for BP, diabetes, heart problems,epilepsy etc. The earlier order of 1995 contained only just 74 bulk drugs.
    2. Prices of key formulations (as notified) are regulated as against the drugs in the 1994 order. The manufacturers used to evade it by bringing slightly different versions.
    3. The 1994 order was based on cost-plus pricing mechanism and bred inefficiency. The new order follows a transparent market-based mechanism. But its weakness is that it will simply lock in existing inefficiencies and may result in many "price-controlled" medicines continuing to be sold at high margins of 10x - 30x.
    4. Prices would regulated based on the essentiality of the drugs instead of the market share criteria in the 1994 order.
    5. Another weakness is that it does nothing to stop the practice of doctors prescribing expensive brands instead of prescribing the generic molecule. This will simply lock in their current high margins.
2. The average price to retailer will be calculated as simple average of all the versions with market share more than or equal to 1%. There is a separate formula for cases where this exercise doesn't lead to a fall in prices or where there is less competition. Ceiling price will be annually inflation indexed.
    1. Its weakness is that it doesn't allow for rupee depreciation when 50% of the formulations are imported from China.
    2. The price of those formulations or drugs will not be considered in the calculation if their market share is less than one percent. In the real scene, only small or medium, local manufacturers sell medicines at very low price. The price will be far below the price of that by big multi national manufacturers. However the small manufacturer may not have turnover of one per cent or more. Hence, however low that price is, that will not reflect in the ceiling price. So in effect, if, only big brands have the field between them, the ceiling price will be only a confirmation of their own price existing.

- Then the ceiling price to the consumer will be calculated by adding a 16% margin to the average price to the retailer.
- All the existing manufactures, selling at a price higher than the ceiling price, will have to reduce their price to bring it under the ceiling. Those selling below it cannot raise their price. (Easy to see how this can be gamed.)
- Any manufacturer, intending to discontinue any scheduled formulation shall issue a public notice and also intimate the government at least 6 months prior. The government may, in public interest, direct it to continue with required level of production or import for up to 1 year.

Impact

1. Consumers will be the biggest beneficiaries as prices of some brands may fall by up to 70% including the essential medicines.
2. The policy will cover two-thirds of the domestic industry. In the short-term, industry profitability could decline but the surge in volumes and inflation indexation will make up for any losses.

Writing Expensive Prescriptions - Reasons

1. There is an intuitive feeling that the original molecules, often from MNCs, are of a higher "quality" and hence more efficacious. This is not true. Besides, many big companies get their drugs manufactured by small companies and just market them.
2. There is something called "brand loyalty" and "brand familiarity", which develops over prescribing the same product for years. Sometimes it could be just plain ignorance about the availability of a cheaper alternative.
3. Most important reason is marketing "incentives" for doctors. Hospitals choose to stock only certain drugs in their in-house pharmacies and insist that patients buy drugs only from it. Doctors get their cut. Chemists themselves may substitute one brand for another.

Universal Health Care - NOT IMP NOW

Reddy Panel's Recommendations for the 12th Plan

1. Currently it is investing only 1.4% of GDP in health. This needs to go up to 2.5% by end of 12th Plan (government will invest 1.58% in health and 0.9% was invested in sanitation and water which will now be counted as health investment taking the total to 2.5%) and 3% by 2022.
2. Health should be made cashless and no charge should be levied on any user. Access to health be made universal. The funding should come out of state resources.
3. On educational front, distribution of medical colleges (government is planning to convert 600 district hospitals into medical college by the end of 13th FYP), nursing schools should be made equitable and a new bachelor course should be introduced in rural health care.
4. Currently there is one social health worker for a habitation of 1000 persons, this should be doubled.
5. Government has agreed to the following: Health expenditure to be raised to 2.5% from 1.4% and essential generic drugs will be made universally available free.

Proposed Architecture

1. National Council for Human Resources in Health (NCHRH).
2. National Health Regulatory and Development Authority (NHRDA).
3. National Drug Regulatory and Development Authority (NDRDA): The main aim of NDRDA should be to regulate pharmaceuticals and medical devices and provide patients access to safe and cost effective products.
4. Purchase of all health care services under the Universal Health Coverage (UHC) system should be undertaken either directly by the Central and state governments through their Departments of Health or by quasi-governmental autonomous agencies established for the purpose.
5. All government funded insurance schemes should, over time, be integrated with the UHC system. All health insurance cards should, in due course, be replaced by National Health Entitlement Cards.
6. Develop a National Health Package that offers, as part of the entitlement of every citizen, essential health services at different levels of the health care delivery system.
7. Reorient health care provision to focus significantly on primary health care.
8. Strengthen District Hospitals. Ensure adequate numbers of trained health care providers and technical health care workers at different levels by a) giving primacy to the provision of primary health care b) increasing Human Resources for Health (HRH) density to achieve WHO norms of at least 23 health workers (doctors, nurses, and midwives).
9. Transform existing Village Health Committees (or Health and Sanitation Committees) into participatory Health Councils.

Foreign Experience

1. OECD governments spend between 5% and 8% of their GDP on health; the US government spends nearly 9% of its GDP (its total expenditure on health is a whopping 17% of GDP) and yet 50 million people do not have adequate access to healthcare in that country. This is due to the way in which healthcare is financed: it is predominantly insurance-based. In the last two decades a number of middle-income countries and a few low-income countries have also reached near universal access for their respective populations and these include Brazil, Mexico, Venezuela, Costa Rica, Thailand, Malaysia and Sri Lanka.
2. Colombia had a reasonable public health system which under the structural adjustment policy of the World Bank was transformed into an insurance-based health model that privatised the healthcare system in Colombia and destroyed the public health system.
3. Tax: GDP ratio should be > 25%, taxation must be progressive, financing of healthcare must be predominantly tax based. Governments have to commit close to 5% of GDP to realize universal healthcare. There should be a constitutional mandate guaranteeing right to healthcare. Finally, a social movement to politicize healthcare would have to exert the demand-side pressure for right to healthcare.

ICDS

Scheme

1. It is a $3 bio scheme. It provides a package of 6 services to children below 6 years and pregnant and lactating mothers. Anganwadi is the focal delivery point.
2. It is not a full nutrition scheme but only provides the supplementary nutrition which is required nutrition - actual intake. So far 80 mm children and 20 mm mothers have been covered.
3. Angan Wadi Workers (AWWs)are supposed to deliver services like contraceptive counselling, neonatal and postnatal care, nutrition supplementation, vaccination, non-formal pre-primary education in 0 to 6 years range.

Analysis

1. For all practical purposes, the AWWs are the first line of contact. There are many cases where the AWWs have been instrumental in preventing child marriages. And yet they are not considered government employees. They are “honorary” or “part-time” workers who receive a poor honorarium.
2. A majority of the centres function from spaces that are in an abysmal condition. Infrastructure in these centres is neither child nor mother friendly and they lack even toilets and running water supply.
3. CAG audit has revealed that funds have been diverted to activities not permitted under the scheme.
4. There is shortage of staff at all levels, lack of medicine kits and poor hygiene levels.

Sixty one *per cent* of the test checked AWCs did not have their own buildings and 25 *per cent* were functioning from semi-pucca/kachcha buildings or open/ partially covered space. Separate space for cooking, storing food items and indoor and outdoor activities for children was not available in 40 to 65 *per cent* of the test checked AWCs.

Poor hygiene and sanitation were noticed in the AWCs due to the absence of toilets in 52 per cent of the test checked AWCs and non-availability of drinking water facility for 32 per cent of the test checked AWCs.

There were shortages of staff and key functionaries at all levels.

Thirty three to 47 *per cent* children were not weighed for monitoring their growth during 2006-07 to 2010-11. The data on nutritional status

There was a gap of 33 to 45 *per cent* between the number of eligible beneficiaries identified and those receiving the SN during 2006-07 to 2010-11.

Pre-School Education (PSE) kits were not available at 41 to 51 *per cent* of the test-checked AWCs during the period 2006-11.

Shortfall of 40 to 100 *per cent* was noted on the expenditure against the funds released for Information, Education and Communication (IEC) in many States.

Against the total release of ₹ 1753 crore to 13 States during 2008-09 and 15 States during 2009-11 for meeting the expenditure on salary of ICDS functionaries, the actual expenditure was ₹ 2853 crore indicating unrealistic budgeting and consequent diversion of funds from other critical components of the scheme.

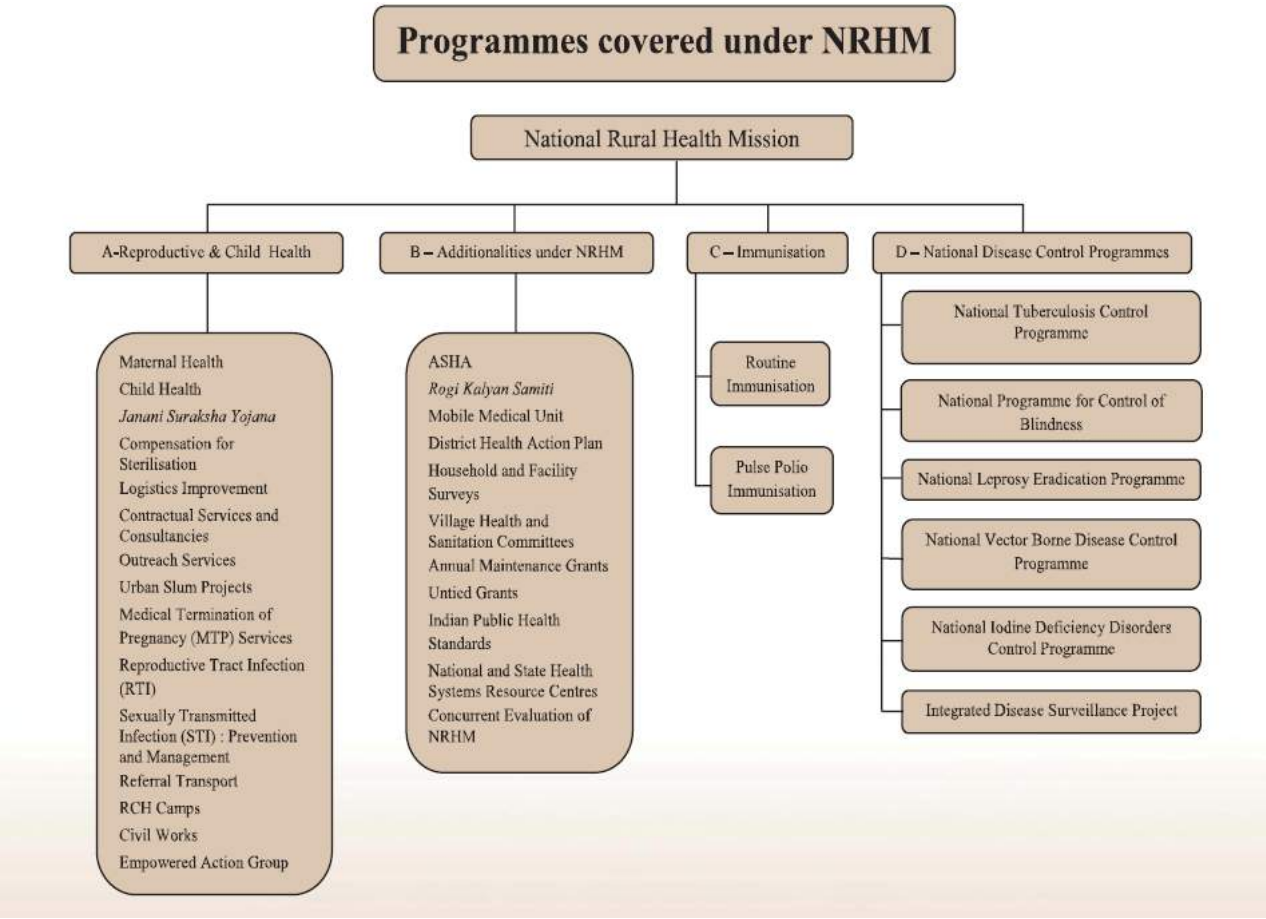
₹ 57.82 crore were diverted to activities not permitted under the ICDS Scheme in five of the test-checked States and ₹ 70.11 crore were parked in civil deposits/ personal ledger accounts/bank accounts/treasury resulting in blocking of funds.

The Central Monitoring Unit (CMU) under the ICDS Scheme failed to efficiently carry out assigned tasks, which included concurrent evaluation of the Scheme, monitoring through the progress reports received from the States.

Impact assessment of the services under the SN and the PSE based on outcome indicators, such as nutritional status of the children, was not being done.

The follow-up action on internal monitoring and evaluation by the Ministry was not adequate and resulted in recurrence of shortcomings and lapses in the Scheme implementation.

National Rural Health Mission (NRHM)



Objectives

1. To provide effective healthcare to rural population throughout the country with special focus on 18 backward states.
2. To raise public spending on health from 0.9% of GDP to 2-3% of GDP.
3. Capacity building in public health delivery.
4. Provision of a female health activist in each village.
5. To integrate traditional knowledge in public health delivery system.
6. Effective integration of health concerns like sanitation & hygiene, nutrition, and safe drinking water.
7. The District Health Mission (DHM) to be led by the Zila Parishad.
8. ASHAs would be selected by and be accountable to the Village Panchayat.

The main objectives of NRHM are:

- Reduction in child and maternal mortality;
- Universal access to public services for food and nutrition, sanitation and hygiene and universal access to public health care services with emphasis on services addressing women's and children's health and universal immunisation;
- Prevention and control of communicable and non-communicable diseases, including locally endemic diseases;
- Access to integrated comprehensive primary health care;
- Population stabilisation, gender and demographic balance;

Architecture

1. Primary health centers
2. Community heath centers
3. Sub district hospitals
4. Skill- based training: Given to Auxiliary Nurse Midwives/Staff Nurses/Lady Health Visitors; training of MBBS doctors.
5. Accredited Social Health Activists (ASHAs)
6. Rogi Kalyan Samitis.

The Mission was to be funded by the Governments of India and Uttar Pradesh in the ratio of 85:15 and its goals were to be achieved under the aegis of State Health Mission (SHM) headed by the Chief Minister. The State Health Society (SHS) and the State Programme Management Unit (SPMU) were to implement the Mission through District Health Societies (DHSs) at the District level and *Rogi Kalyan Samitis* (RKSs) at Hospital level.

3. Planning

NRHM envisaged a bottom up approach to planning with integration of village and district plans, with the State level plans. It was seen that no baseline surveys had been undertaken to identify gaps in healthcare. Consequently, State PIPs were not prepared for 2005-06 and 2006-07. Moreover, PIP of 2007-08 was prepared without any inputs from districts, as District Health Action Plans (DHAPs) were not prepared during 2005-08. State PIPs were prepared without obtaining inputs from other social sector departments. There was no formal, transparent and documented methodology for appraising DHAPs.

Though the State Government stated that Village Health and Sanitation Committees (VHSCs) were constituted in almost all villages, documents produced did not corroborate this. Panchayati Raj Institutions (PRIs) were to be fully involved so that the gains of integrated action accrued to the DHAPs. The envisaged active convergent approach with PRIs was not adopted in the planning process. Further, there was lack of convergence within the Health Department, and with other departments relating to drinking water, sanitation, food, nutrition, social security etc., and with Non-Governmental Organisations (NGOs). Consequently, the convergence was not reflected in the State PIPs and DHAPs.

Issues

1. Though, one of the core strategies of this programme is to train and enhance capacity of PRIs, the actual implementation of the programme has led to a few distortions such as (i) creation of parallel structures like District & Village Health Committees and (ii) multiplicity of fund transfers.
2. The present practice of installing separate village committees under departmental command needs to be dispensed with. Gram Sabha should look over it.

Indira Gandhi Matritva Sahyog Yojna (IGMSY)

Features

1. It is a conditional cash transfer scheme which gives money in installments to pregnant and lactating women from conceiving to unto a few months after child birth. It aims to compensate women for the wage loss during pregnancy.
2. The woman should be > 19 years of age and support is only given for first 2 children.

Limitations

1. Given the social context of India, exclusion will only victimize the victim who has no control over her marriageability and reproductivity.

Janani Suraksha Yojna (JSY)
Features

1. It is a part of NRHM and aims to increase institutional deliveries.
2. Under it women who go to hospitals for delivery are paid Rs. 1400 in rural areas and Rs. 1000 in urban areas.

Mother -Child Healthcare Scheme
Features

1. It aims to increase institutional deliveries and is complementary to JSY.
2. It provides free services to pregnant women and newborns for their delivery in government hospitals.

Rashtriya Swasthya Bima Yojna (RSBY)
Features

1. BPL families are entitled to hospitalization coverage up to Rs. 30,000/- for most of the diseases that require hospitalization.
2. Coverage extends to five members of the family which includes the head of household, spouse and up to three dependents.
3. Central and State Government pays the premium to the insurer selected by the State Government on the basis of a competitive bidding.

Performance

1. So far 25 mm households have been enrolled and aim is to reach 70 mm households by 2017.
2. It covers only hospitalization which constitutes only 20% of the health expenditure by the households. So its usefulness is pretty limited.

Mother and Child Tracking System
Features

1. It is a monitoring scheme and seeks to collect data over pregnant and lactating mothers. It has a call centre for this purpose.
2. Mothers are covered up to 42 days from delivery and children up to age of 5 years.

Total Sanitation Campaign

1. Constructions under TSC are not proving to be sustainable and people are relapsing to open defecation. The problem arises because TSC is becoming increasingly state-led and target-driven and often implemented without any conscious effort to create required awareness at the community level. The programme is often driven by a desire to achieve fund utilization. Top-down strategies of posters and brochures with no individual contact have proven to be ineffective. Great effort is required to sustain the gains of the adoption phase to ensure that slip-backs do not occur.
2. Another limitation of TSC is the narrow range of technology options offered in a country with such immensely diverse geographic, hydrologic, climatic and socio-economic conditions (high water table, flood prone, rocky ground, desert/water scarce areas and extreme low temperatures). This has led to many problems, including non-acceptance by local communities, water pollution especially in shallow water table regions.
3. It is also clear that use of toilets cannot be sustained without provision of water supply and many NGP villages have slipped back because the promised water supply never materialized.
4. Incentive per toilet was very little.

Nirmal Bharat Abhiyan

Differences from Total Sanitation Campaign

1. The amount sanctioned for the construction of individual household latrines has been more than doubled from Rs. 4500 to Rs. 10000 out of which Rs. 4500 will come from NREGA. At present center contributes Rs. 2100 and states Rs. 1000. In the new scheme, Center will contribute Rs. 3200 and states will contribute Rs. 1400. Individual families will provide Rs. 900!
2. Distinction between BPL/APL families has been scrapped to achieve total sanitation in India by 2020.
3. A shift from motivating individual household toilet construction to covering whole communities in the village.
4. Houses in IAY will be constructed with individual latrines.
5. 15% of the project funds have been earmarked for spreading community awareness.
6. Due to the close link between sanitation and availability of drinking water (bad sanitation hampers drinking water availability), PC has stepped up the allocation for drinking water and sanitation to $7 bio in 12th FYP (from $1.5 bio in 11th FYP).

Objectives

1. The goal is to achieve 100% access to sanitation for all rural households by 2022. Also as per 12th plan objectives of NBA, 50% of all the Gram Panchayats are to become Nirmal Grams by 2017. For this fund allocation has been increased from Rs. 6,500 crores to Rs. 35,000 crores in the 12th Plan.

Health Issues
Acute Encephalitis Syndrome

1. The virus has a 25% mortality rate and spreads by contaminated water. Among the survivors, 30% are left mentally retarded. So far the main targets have been the malnourished children. UP and Bihar are the worst affected states. The disease surfaces every year in the summers and subsides with the monsoons, so no awareness campaigns are carried out. Tests are carried out every year and they just establish that it is not Japanese encephalitis. Simple steps like drinking boiled water can check the disease.
2. To find out the exact nature of the disease brain tissue tests have to be carried out. But that is permissible only when the disease is declared as an epidemic. But because it generally strikes in the maha dalit areas of Bihar declaring it as an epidemic can lead to ghetttofication of the community.
3. The government has launched an integrated strategy to counter it. As a part of this strategy - (a) Schools will be used as a vaccination centre. (b) Clean water and sanitation will be provided to the high risk districts. (c) There will be separate schools for the affected children and monthly compensation will be paid to BPL families whose children suffered from elephantiasis.

Government Action Plan Against Japanese Encephalitis and Acute Encephalitis Syndrome

1. $800 mm proposal under Ministry of Health to be implemented across 60 priority districts in the 12th FYP. Focus on states such as Bihar, Assam, UP, W Bengal and TN. It includes public health interventions, vaccination expansion, medical and social rehabilitation, drinking water supply and sanitation and nutrition.
2. It will reduce JE cases by strengthening vaccination and vector control and AES by safe drinking water and nutrition.

Leprosy

1. The National Leprosy Elimination Programme met its target of <10 cases in 100k pop in 2005. Still India produces more than 50% of the lepers today.
2. To move from "elimination" to "eradication" i.e. 0 occurrence, NLEP has identified certain endemic pockets in different states to focus on. It is also emphasizing on early detection of the disease.
3. One of the problems it faces now is that after the achievement of the target in 2005, international funds were cut off and now it suffers lack of fund.
4. Another challenge is high incidence of child leprosy cases as well as social discrimination.

5. Even some legal acts like divorce, hindu marriage account for leprosy as one of the valid reasons for divorce. LIC charges lepers higher insurance premium, lepers may not be allowed in trains and cannot get driving licenses.

Polio

Background

1. Earlier a trivalent polio vaccine was used which attacked type 1, type 2 as well as type 3 polio. But it was most effective against type 2 and less effective against types 1 and 3. So while type 2 polio was eradicated by 1999, types 1 and 3 remained.
2. Type 1 proved to be cyclical with a 4 year outbreak frequency. So to contain it, a monovalent polio vaccine was developed. By 2010 it was controlled.
3. But type 3 cases increased so a bivalent vaccine was developed and no cases related to wild polio virus have been reported since January 13, 2011.

Challenges Ahead

1. 7 polio cases have been reported from the vaccine polio virus. Children vaccinated with this virus continue to secrete the virus in their excretions which can cause further polio. This is called Vaccine Associated Paralytic Polio (VAPP.
2. Apart from directly causing polio, this virus has a tendency of transforming into the wild polio virus and spread polio. This is called Vaccine Delivered Polio Virus (VPDV).
3. To counter this, the Integrated Polio Vaccine (IPV) needs to be administered now instead of the OPV.
4. However its current costs are high so innovations are necessary to bring down its costs.
5. Currently Pakistan, Afghanistan and Nigeria are polio countries. Wild virus can come from there and if the international community does not follow through with the nearly $1 bio in funding needed to fully implement the emergency plan through 2013.

Different Polio Vaccines

1. OPV: It is the oral vaccine and the wild virus strains are weakened considerably in the vaccine. When they reach the intestine they replicate and evoke the immunity response. But risks are that this virus mutates and becomes wild.
2. IPV: Inactivated polio vaccines use the killed virus which can't replicate and hence is safe. But it is injected and is expensive.
3. New OPV: This is the modified OPV where the gene needed for replication of virus is removed and hence virus can't replicate and thus can't mutate into wild virus.

Clinical Trials

PARLIAMENTARY PANEL REPORT ON HPV VACCINES

- Parliamentary Standing Committee's report on the "Alleged Irregularities in the Conduct of Studies Using Human Papilloma Virus (HPV) Vaccine by Program for Appropriate Technology in Health (PATH) in India", has acknowledgement of the unethical nature of the HPV trials conducted in the country.
- Angered at the gross irregularities in drug trials and the lapses in monitoring, a parliamentary panel lashed out at the government for failing to safeguard people who were taking part in clinical trials. The major bone of contention was the US-based NGO called PATH (Programme for Appropriate Technology) which tested cervical cancer vaccines on tribal girls. It charged the government with inaction and allowed to carry out illegal trials in the guise of an 'observational project'.
- The trials were suspended following the deaths of five girls in Andhra Pradesh, and two deaths in Gujarat in 2009-10 after being administered the HPV vaccines. What is even more shocking is the fact that the vaccines were provided by Merck and GlaxoSmithKline and was in collaboration with the Indian Council of Medical Research (ICMR) – the country's apex body for the formulation of biomedical research and was reportedly funded by the Bill and Melinda Gates Foundation.
- The Committee's findings are wide-ranging: the nature of the project, the role of ICMR, the role of Drugs Controller General of India (DCGI), the Informed Consent Process, the role of Ethics Committees (EC), the process of inquiry Committee formation and function and the role of PATH.
- The Committee report points to a serious dereliction of duty by many of the institutions involved. In particular, it questions the role of the ICMR, DCGI, EC members and PATH.
- The committee noted that the purpose of the tests were simply to promote the commercial interests of the manufacturers who would have made a lot of money if the vaccine was included in the government-run Universal Immunisation Programme.
- The panel said in the report that it was a 'serious breach of trust by any entity' and a 'violation of human rights of the girls who were unaware of the implications'. The panel has also asked the government to notify WHO and UNICEF about the aforementioned violations. It also asked health ministry to take up the matter with the foreign ministry so that the US government could take appropriate action against PATH.
- The report was also damning for the Drug Controller General of India (DCGI), the head of the Central Drugs Standards Control Organisation (CDSCO), who it claimed 'remained a silent spectator even as its own regulations were being violated' while there were also irregularities in the approval of the clinical trials, the import licenses and even the marketing approvals. While the issue was reported in 2010, the new report points to a horrendous amount of irregularities. It's almost as if rather than acting as a regulatory body, the ICMR was acting actively to promote the interest of the HPV vaccine manufacturers.
- The report also pointed out that the cases of serious adverse events (SAE) weren't monitored during the

ANALYSIS

- When regulators become violators, who is to regulate them? That perplexing question is what arises from the damning report of the Parliamentary Standing Committee.
- But more importantly, the report provides a rare glimpse into the murky ways in which certain policy decisions that affect a large number of people are taken by nodal agencies with utter disregard to propriety.
- The vaccine given to young girls for preventing cervical cancer was approved for use in India in October 2008. But an MoU was signed as early as February 2007 by the Indian Council of Medical Research and an American agency, Programme for Appropriate Technology in Health, wherein the regulator committed itself to "promote the drug [vaccine] for inclusion in the universal immunisation programme" well before the "utility and rationale" of inclusion was studied.
- Incidentally, the ICMR is not the body that takes a call on introducing a vaccine in the immunisation programme. Thus, by entering into an agreement, the ICMR abdicated its responsibilities of being a watchdog and instead became a "willing facilitator [that] acted at the behest of PATH in promoting the interests of the [vaccine] manufacturer."

- The Drug Controller General of India is equally culpable for being a mute spectator when clinical trial rules were "flagrantly violated."
- If the nodal agencies bending over backwards to facilitate the introduction of the vaccine is shocking, the Union Health Ministry's role in scuttling the truth-seeking process is alarming. The ministry has made a mockery of the trial subjects by choosing people with well-established conflicts of interest to be a part of the inquiry committee to look into the irregularities.
- The DCGI, on its part, ensured that "no accountability was fixed" on the erring officials and no definite steps were taken to improve the trial process.

RECOMMENDATIONS FOR APPROVAL OF NEW DRUGS

- An official expert committee headed by Prof. Ranjit Roy Chaudhury, has recommended major changes in the guidelines for approval of new drugs, clinical trials and banning of medicines.
- It suggested setting up of a council to oversee the accreditation of institutions, clinical investigators and institute ethics committees for clinical trials in the country.
- It said clinical trials can only be carried out at accredited centres. Both the principal investigator of the trial, and the ethics committee of the institute should be accredited. Only those trials conducted at such centres should be accepted by the Drugs Controller General of India (DCGI).
- Seeking to set up a Central Accreditation Council, the panel said the selection of assessors for accreditation and of experts to review new drug applications and other purposes should be made by a random procedure from a Roster of Experts.

- Focusing on the importance of informed consent from each participant for clinical trials, the panel said any departure or violation from the approved process should result in blacklisting of the Principal Investigator for at least up to 5 years.
- In circumstances where special groups of people who have diminished capacity to protect their interests are involved, the guardian can give consent and this should be witnessed by an independent person who also has to sign the document. Audiovisual recording of the informed consent process should be undertaken and the documentation preserved, adhering to the principles of confidentiality, it said.
- The report was silent on whether clinical trials should be covered under the Right to Information Act.
- Further, it calls for replacing the existing 12 drug advisory committees by a single broad expertise-based Technical Review Committee to ensure speedy clearance of applications without compromising on quality of data and rules and regulations.
- On compensation for adverse effects (AE) or serious adverse effects (SAE) during trial, the committee puts

The Drugs and Cosmetics (Amendment) Bill, 2013

1. The Bill seeks to enhance safety of drugs and also of clinical trials.
2. Definition and scope
    1. The definition of drugs is extended to include new drugs, all vaccines, Recombinant DNA derived products, LMOs, stem cells, gene therapeutic products etc.
    2. The Bill creates provisions for the medical treatment and compensation in case of injury or death of a person during participation in a clinical trial or due to it.
    3. In order to ensure standard quality of drugs, the Bill specifies conditions under which they will be considered misbranded and spurious and specifies penalties.
3. Composition of the Authority
    1. The CDA will subsume the existing Central Drugs Standards Control Organisation.
    2. The CDA will be composed of representatives from the various ministries and other experts nominated by the central government.
    3. The Bill constitutes the Medical Devices Technical Advisory Board and the Drugs Technical Advisory Board to advise the central and state governments and the CDA on technical matters pertaining to medical devices, and drugs.
4. Functions of the Authority
    1. Anyone initiating a clinical trial has to register with the Central Drug Authority (CDA) and get approval from an Ethics Committee registered with it.
    2. The CDA shall specify guidelines and requirements for the effective functioning of the central and state licensing authorities; review, suspend or cancel any licence or permission issued by them; and decide on disputes between two or more state licensing authorities.
    3. The DCGI is the central licensing authority that has the power to issue, renew, suspend or cancel licences for drugs or permission for conducting clinical trials.

Biomedical and Health Research Regulation Bill, 2013

Government has **proposed** Biomedical and Health Research Regulation Bill, 2013 in order to regulate **biomedical and health research involving human participants**, whether in conventional areas, or in new evolving specialized fields.

Some key points about Biomedical and Health Research Regulation Bill, 2013:

- The Bill seeks to provide ways to safeguard ethical values in accordance with both local cultural values and international benchmarks so as to generate, maintain and reinstate public trust in research.
- As per the Bill, a **Biomedical and Health Research Authority** will be set up and it will be mandatory to register all ethics committees in research institutions, colleges, universities and other organizations involved in research with the Authority.
- The Biomedical and Health Research Authority will register, monitor and evaluate the performance of ethics committee, develop performance appraisal systems and norms and mechanisms for implementing transparency and accountability; and assess the need for providing protection to vulnerable sections.
- The Bill will confer **statutory powers on the Ethical Guidelines for Biomedical Research on Human Subjects**, drafted in 2000 by the ICMR's Central Ethics Committee on Human Research, under the chairmanship of the former Chief Justice of India, Justice M. N. Venkatachaliah. The guidelines were revised in 2006.
- Human participants in a research will be entitled to "due remuneration, compensation or reimbursement for the time lost, besides reimbursement of travelling and other incidental expenses incurred in connection with his participation in research."
- The ethics committee will decide the amount and it will also ensure that the amount is not such which can be considered as inducement for participation in research.
- The investigator and the institution shall take necessary steps to protect the interest of special or vulnerable groups while the ethics panel shall ensure that research participants are selected by the investigator in such a way that the "burden and benefits" are equally distributed.
- **Consent** of the human participant will be **mandatory** for using human biological materials or data.
- Approval from the ethics committee will be mandatory for using human biological materials or data for the primary intended purpose. The ethics panel will separately examine any request for secondary use of the human biological material or data.
- **Bio-banking** of the human biological material will not be allowed without consent of the human participant which should be regulated by the specific principles of bio-banking.
- Researcher shall maintain **strict confidentiality** of all research data which might lead to identification of the individual participant to avoid any consequent stigmatization and discrimination unless he/she is under obligation to reveal the information to any official or the government department concerned under the provisions of any law.
- The investigator must obtain **voluntary, documented, informed consent** of individual participants after being fully informed of his involvement in the research and also to withdraw the consent given earlier.
- In case of an individual who is not capable of giving informed consent, for any reason, the consent of his legal guardian or legally authorized representative will have to be obtained.

INDIAN MEDICAL COUNCIL (AMENDMENT) BILL, 2013

- A Bill seeking to empower the government to give directions to the Medical Council of India on key policy matters and reducing the tenure of its President to four years was introduced in Rajya Sabha.
- The Bill seeks to replace the Indian Medical Council Amendment Ordinance, 2013 that provided to amend the Indian Medical Council Act, 1956 to make it more comprehensive.
- The Act provides for the constitution of the Medical Council of India (MCI) to: (i) maintain standards of medical education, (ii) give permission to start colleges, courses or increase the number of seats, (iii) recommend the recognition of medical qualifications, (iv) register doctors and maintain the All India Medical Register, and (v) regulate the profession of medical practitioners.
- The composition of the MCI is changed to include more representation from the Union Territories. The term of the MCI is for four years.
- The Indian Medical Council(Amendment) Bill, 2013 allows only two consecutive terms to the President. Earlier, the MCI President could have a five-year tenure and there was no limit on the number of terms.
- The Bill seeks to give government powers to remove the President, Vice President or a member of MCI if found indulging in corrupt practices or abuse of position or proved guilty of misbehaviour.
- The government had no control over the elected body under the present law but has been tightening its hold on the apex medical body after elected MCI body was disbanded in May 2010 and a Board of Governors installed following arrest of Chairman Ketan Desai by CBI over charges of corruption.
- The MCI is currently run by a Board of Governors with seven members.
- The new Bill also seeks to recognise the medical qualification and provisional registration of overseas citizens of India.

Supreme Court Order on Clinical Trials

1. Order
    1. Clinical research in India has been in limbo since January 3, when the Supreme Court held back the Central Drug Standard Control Organisation (CDSCO) from granting permissions, after irregularities in the process were brought to its notice.
    2. While the health ministry had set up a committee to suggest improvements in the process, and the government had established a three-tier system with a **new drugs advisory committee**, a **technical committee** and an **apex committee**, it had also granted approvals to 162 trials in the interim.
    3. The Supreme Court, having learnt on Monday that only five of these had been vetted by the health secretary, has demanded that the subjects' consent be video-recorded, and that the 157 other trials be re-evaluated by the technical committee and apex committee, which must factor in a risk-benefit analysis, innovation value and the medical need in this context.
2. Clinical trials in India
    1. After it introduced patent protection laws in 2005, India has been of great interest to drug companies and clinical research organisations because of diverse genetic material, and also because R&D costs can be nearly 60 per cent lower in phase II and III trials.
    2. Clinical trials have often been conducted in deceptive, even immoral, ways without informed consent, and with misrepresented data, and the resulting reputational damage has tripped up this entirely necessary business.
    3. The real issue, though, is not the lack of clear rules as much as the inability to enforce them. A parliamentary standing committee report in May last year harshly exposed the CDSCO's internal workings. Though its workload is growing by 20 per cent every year, it lacks the staff and infrastructure, advisors and independent testing labs to do its job — merely nine deputy and assistant drug controllers handle 20,000 applications of various types.

Central Drugs Standard Control Organization Scam

JPC Report

1. It pointed out that the CDSCO has been looking after the interests of the pharmaceutical industry at the cost of the ordinary consumer. It also alleges and gives detailed facts where CDSCO colluded with the pharmaceutical companies. Medicines are a commodity where consumers cannot make informed choices. They depend solely on three main actors: the drug regulators, the pharmaceutical companies and the prescribing doctors. Hence the need for a genuine regulator.

2. 33 new drugs were approved between 2008 and 2010 without clinical trials on Indian patients. Drug Controller General of India can approve a drug without clinical trials, in the "public interest" and "urgency". But the committee noted that there is no explanation of what constitutes public interest and none of the 33 drugs are meant for emergency treatments. The committee found that many banned in developed countries for reasons of safety were being sold over the counter in India.
3. There is no permanent panel of medical experts attached to the CDSCO and individual doctors and experts from prestigious medical institutions are asked to give their opinions before the drugs are marketed. It also found that the "invisible hands of drug manufacturers" guided and wrote the so-called expert opinion signed by medical professionals and doctors (the annexures to the report carry photocopies of a number of these opinions, some of them are identical!).
4. The committee has also noted that there are a number of allied issues that have been neglected over the years. Among these are the severe shortage of drug inspectors to visit the 10,500 manufacturing units and 6,00,000 retail units.
5. Its recommendations were: (a) Remove unauthorized drugs (those approved by state authorities, without clinical trials and without prior clearance from the CDSCO, in spite of being new drugs). (b) Transparent criteria for selection of persons for Drug Advisory Committee. (c) Remove confusion over near sounding and similar brand names. (d) A database of all brand name medicines along with constant updating of information on all drugs being marketed be maintained and made public in all major languages.

Government Response

1. It has created another committee to investigate the report of JPC.

Illegal Drug testing in India

1. Even though India accounts for < 1.5% of global drug trials, it suffers death of ~10 individuals per week. Even SC has issued a notice to the pharma companies and doctors for colluding in a case in Indore.

Rashtriya Bal Swasthya karyakram

- Started on pilot level in Palaghar block, Thane, Mah
- To be enacted under **NRHM**
- For 6months- 18years
- Medical teams will screen children for 30 common diseases
  - 6months-6years- Anganwadi centers
  - 6-18 years- G and G aided schools
- Distt. Early intervention centers (DEIC) to be set up at block levels for these diseases
- **PRoblems- Main problem is manpower**
- **Measures-** Health ministry approved setting up of 9 institutes for allied health workers (not exactly doctors)- nurses, lab techs, radio therapists

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Industry

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Industrial Development in India

DAMODARAN COMMITTEE REPORT

- Damodaran Panel, constituted for changing India's regulatory environment and making business environment investment friendly, has submitted its suggestions to Ministry of Corporate Affairs (MCA).
- The recommendations are classified in five broad categories -- legal reforms, regulatory architecture, boosting efficacy of regulatory process, enabling MSMEs, and addressing state level issues.
- Terming retrospective taxation a "significant disincentive" for entities wishing to do business in India, it has suggested a string of legal, administrative and regulatory reforms to make the country a better and easier place for doing business.
- Retrospective taxation has the undesirable effect of creating major uncertainties in the business environment and constituting a significant disincentive for persons wishing to do business in India.
- Expressing its disapproval of any "clumsy drafting" of regulations, the panel said: "It is necessary to ensure that simplicity and clarity should inform the content of regulation, leaving no part of it open to different interpretations by different persons".
- The Committee also felt that the use of information technology (IT) can be one possible solution wherever information asymmetry adversely impacts the regulatory environment. More effective use of IT can address multiple problems such as access to correct information, exchange of best practices and so on.
- It is recommended that there should be a mechanism to dis-incentivise use of civil courts for resolving contractual disputes, so as to encourage arbitration as a preferred manner of resolution.
- On appointments and supervision of regulatory authorities, the panel said these matters should be decided in a "far more transparent manner".
  - While advocating financial autonomy to regulators for a "genuine functional autonomy", the panel also said that the accountability can be ensured by making the heads and board level persons of regulatory bodies appear before an appropriate Parliamentary Committee once in six months to report on past developments and a broad plan of action.
  - It also recommended a self-evaluation by every regulator once in three years and putting out the same in public domain.
  - The panel has also suggested a two-stage consultative for all new regulations, wherein a revised draft can be put up for comments after the first round of stakeholder consultation.

VISION IAS

- It suggested setting up a regulatory review authority and a sunset clause for all new regulations and regulatory agencies.

- For MSMEs, the panel said it is necessary to have single window channels of compliance to help small business entities and also a hassle free tax payment regime.
- Stressing the need for an easier set of regulations for micro, small and medium enterprises, the panel said the large enterprises may have the wherewithal to deal with the complex business environment, but a greater coordination amongst ministries and policymakers is required for MSMEs.

- The panel also recommended that the grant of permissions or the decision not to grant permissions should be taken within a prescribed time period, failing which there should be a provision for deemed permission.
- To address state-level issues, the panel said that each state government can appoint a nodal person and a nodal office, which can be the single point contact for persons intending to obtain information on procedures and conditions for setting up a business.
- It recommended that an appellate process be built into the system where a person aggrieved by an order of rejection of permission to set up a business may appeal to a superior authority for reconsideration.

Plastic park

Recently the policy was modified to specify the role of state governments the scheme will be demand driven and the government grant will be one time grant –in – aid. This grant will be given to the special purpose vehicle (SPV) formed by the State Government or any of its agencies such as State Industrial Development Corporation (SIDC) in association with user enterprises representing the plastic sector / sub sector.

Government of India would provide grant funding up to 50% of the project cost subject to a ceiling of Rs. 40 crore per project. The remaining contribution in the SPV will be from the State Government or State Industrial Development Corporation or similar agencies of State Government, beneficiary industries and loan from financial Institutions. The equity contribution of the State Government or respective SIDC shall be at least 26% of the cash equity of the SPV (excluding value of any land given as equity).

Currently, the industry is highly fragmented and disorganised. Most units are in the small and medium category. While they are producing and processing plastic, there is no hub where one can source it at one place."

"On the other hand, there are industries ranging from tooth brush and milk pouches to automobiles and automobile spare parts and accessories which are regularly facing a problem of timely availability of raw material both in basic or processed form Therefore, such a park will act as a hub for manufacturers of telecom or automobile and other users to source the material

Debate: Export Promotion vs Import Substitution

For Export Promotion

1. Induced demand argument: Import substitution can be of 2 types - (a) Substitution of consumer goods imports by capital goods imports. (b) Substitution of imports by domestic production. In India (a) was negligible. But to do (b), we must produce internally. And to produce internally, we need capital goods and technology for which we need forex. How will we get that since our exports are negligible?
2. Economic independence: Do we want to go N Korea way? Anyways India will always suffer from an oil shock and if it doesn't have export surplus it will (a) find it difficult to pay for the oil for which the demand is relatively inelastic and (b) it will not be able to benefit from the increased spending of the oil countries. Also experience tells us that during recessions companies increase IT outsourcing as a part of their cost cutting exercise.
3. Domestic savings argument: Consumers have to pay higher. Also protection is not done to protect profits, but just to cover costs and earn normal profits. So capital generation is absent here as well.
4. As an economy grows although balanced growth is desirable but it is generally not possible. Growth generates imbalances because income elasticities of demand for different sectors varies. These imbalances get reflected through price signals. Here foreign trade can come and help as the economy may not be able to produce everything efficiently by itself. Typically import substitution strategies are associated with high levels of protection and state imposed capacity limits. Often the government fails and resource allocation becomes inefficient. But such a thing is not possible in an export oriented strategy as it responds to global demands and supply factors as well.
5. IS can lead to infant industry protection but after a certain point it has to be abandoned. It can't lead to sustained growth. Export orientation can help exploit economies of scale, can generate learning by doing economies and also economies of scope.
6. Export orientation leads to adoption of new technologies because the producers are always under competition to innovate and produce cheaper and of higher quality. To be successful a producer has to meet quality criteria and also produce lower than a ceiling. Only then he can differentiate himself by superior quality. Undervalued currency can't help in LR.

For Import Substitution

1. Trade gap argument: Comparative advantage of LDCs lies in primary products. Except for a few oil countries, studies show that both the volume and ToT of LDCs are deteriorating. So export promotion to pay for the import of capital goods and technology cannot work in long run.
2. Economic efficiency argument: Autarky promotes economic independence and frees the country from foreign interference.
3. Domestic savings argument: Producers are shielded. So they can charge higher and earn higher profits and hence higher investment.

Bhagwati & Kreuger

1. Export promotion strategies were better for allocation efficiency because IS involves distortions in effective rates of protection and investment incentives.
2. IS goes hand in hand with overvalued fx rate, license raj and fx rationing. This leads to rent seeking behavior by incumbents rather than promoting competition and efficiency.
3. IS leads to welfare losses and also EP leads to realization of economies of scale.
4. The need to compete in global markets may have led to a stronger incentive to absorb new technologies and to innovate.

Q. "It was needless export pessimism that led India to adopt import substitution strategy of industrialization in the pre-liberalization period." Critically examine. (2010, II, 30)

Q. Write a detailed note on the import substitution and export promotion strategy of India. (2007, II, 60)

Debate: Foreign Liberalization: Good or Bad?

1. Trade Gap Argument
2. Technology Gap Argument
3. Savings Gap Argument

Phase 0 (1900-47): Trends
Nature & Character

1. Employment: Share of agriculture and manufacturing remained virtually unchanged from 1900-47. This shows negligible impact of manufacturing. Modern factory sector never employed more than 2% of labor force.
2. Technology: Research institutions and research in companies almost non-existent. Indians not appointed to higher skilled jobs.
3. Source of Capital: Indian capital's share increased and by independence, most of industries were Indian owned.
4. Narrow Spread: Regionally only a few states had industry. Only a few sectors like sugar, textiles etc. dominated whole industrial output.
5. Income: Per capita income increased only 20% in first 5 decades of 20th century indicating negligible impact of industrialization.
6. Composition of Manufacturing: Consumer goods dominated the industrial production. Hence the need to develop capital goods sector for takeoff.
7. Export orientation had been against country's interests.

Manufacturing: Growth & Composition
Phase 1 (1951-67)

Sectors	**1st FYP**	**2nd FYP**	**3rd FYP**	**1951-52 - 1966-67**
Agriculture	3%	3.3%	-0.2%	1.8%
Industry	6%	6.5%	7%	6.3%
Services	4%	6%	5%	4.5%
Overall	**3.5%**	**4.5%**	**3%**	**3.5%**
GDP per capita	**1.8%**	**2.2%**	**0.5%**	**1.5%**

Overall Growth

1. Growth in industries was highest followed by services and then agriculture. Manufacturing got increasing share in the successive plans and also saw accelerating rate of growth in each plan. 1st FYP spent 3% resources on industry while 2nd and 3rd FYP spend 20%.
2. In the 3rd FYP manufacturing growth was higher but overall growth was still lower due to fall in agriculture.
3. In 1950-51 manufacturing constituted just 12% of the overall GDP.

Composition of Growth

1. Rising share of capital and basic goods while falling share of intermediate and consumer durables in manufacturing: Capital goods share rose by 10.5% (from 4.5% in 1956 to 15% in 1965-66). Basic goods rose by 8.5% (from 22% in 1956 to 30.5% in 1965-66) while consumer goods fell by 13% (from 48.5% in 1956 to 35.5%) and intermediate fell by 6.5% (from 25.5% in 1956 to 19% in 1965-66). This was possible due to faster growth rate in capital and basic goods. Capital goods grew @ 16% p.a. in this period (never to be repeated).
2. The share of agro based industries was declining in this period while that of metal based rose. Chemical based industries remained unchanged.
3. Organized vs unorganized sectors: Between 1959-60 to 1965-66, organized sector grew @ 8% p.a.

Statement of Industrial Policy, 1945 - How it was a precursor to future development?

1. It mentioned the concept and need of industrial licensing. Licensing were to be used to reduce regional imbalances.
2. It emphasized on the development of steel, heavy engineering, machine tools and heavy chemicals - which continued after independence.
3. It mooted the idea that the government should actively participate in setting up new and important industries.
4. The list of industries which were proposed to be brought under control resemble the 1951 list.

Industrial Policy Resolution, 1948

1. Some industries like arms, railways, atomic energy would be a state monopoly.
2. Some industries like steel, telephone etc. would allow existing firms to continue but all new firms would be state owned.
3. Some industries would be where government can regulate and license private firms.
4. Remainder are open to private firms.

Industrial Policy Resolution, 1956

1. Agriculture: Left entirely for private sector except wherever state could play a supporting role.
2. Industry: Divided into 3 schedules - (a) 17 industries only for public sector except existing private ones. (b) 12 industries to be progressively state owned and private houses will need licenses and will be regulated. (c) Rest of industries left for private sector but public sector could always participate.
3. Development of infrastructure would be done by state.
4. State would support MSMEs.
5. The state would address regional imbalance of growth.

Phase 2 (1965-80): Inward Orientation and Industrial Stagnation

Sector	**1951 - 55**	**1955 - 60**	**1960 - 65**	**1965 - 76**	**1974 - 79**
Basic Goods	4.7%	12.1%	10.4%	6.5%	8.4%
Capital Goods	9.8%	13.1%	19.6%	2.6%	5.7%
Intermediate Goods	7.8%	6.3%	6.9%	3%	4.3%
Overall IIP	5.7%	7.2%	9%	4.1%	6.1%

Overall Growth

1. Overall growth: Overall GDP grew @ 3.8%, agriculture @ 3.3%, industry @ 4.1% and services @ 4.3%.

Composition of Growth

1. Industrial growth fell drastically, even more drastic was the fall in capital goods: Capital goods: 6.5% p.a (down from 16% p.a. in previous period). Intermediate goods: 4% p.a. (down from 11% p.a. in previous period). Overall manufacturing: 4.5% p.a. (down from 8.5% p.a. in previous period). Only the consumer goods sector showed a moderate decline.
2. Organized vs unorganized sectors: Between 1966-67 to 1989-90, organized sector grew @ 5.7% p.a.

Causes of Structural Retrogression

1. More regulations: MRTP (to check the expansion of industrial houses with assets > Rs. 20 cr), FERA and Industrial Disputes Act, 1976 (firms with > 300 workers had to take government permission before laying off workers), Contract Labor Act, 1970 (firms can't hire contract labor in industries where labor is seen to be essential to the main activity), Urban Land Ceiling Act, 1976 (can't own vacant land beyond the ceiling but gave discretionary powers to the state governments to exempt from ceiling) were passed.
2. Decline in public investment in investment followed by decline in private investment: There was a sharp decline in public investment which was born by infrastructure sector. Share of infrastructure in public investment fell from 36% in first half of 60s to 29% in 70s. Share of industry in FYP resources fell from 20% in 2nd and 3rd FYP to 18% in 4th and 5th FYP.
3. Faltering demand from agriculture as well as rich.
4. Oil shocks, wars and drought: In early 1970s there was a drought which led WPI to shoot up from 5% in 1971-72 to 25% in next 3 years. Then oil shock happened. Government resorted to freezing all wage increases, compulsory bank deposits according to the income slabs, increasing taxes.

Performance of Industrial Licensing

1. To open a new industry, before making any investment, the entrepreneur needed to take an in principle approval in the form of a letter of intent from the ministry of industry. If he needed to import a capital good then he had to obtain a capital goods import license from ministry of commerce. The approval for this import was, however, given by a committee setup by ministry of industry. If there was also a need of foreign technology collaboration he had to obtain a specific approval for this from a committee chaired by finance secretary but serviced by ministry of industry. In order to raise funds if he needed to access capital markets he needed another approval from ministry of finance. If he needed to import raw materials he had to obtain separate license from controller of imports and exports (ministry of commerce) which was subject to certification of essentiality and non indigenous availability by ministry of industry. Once everything was setup, he had to go back to the ministry of industry for the 'license'. In addition, MRTP firms had to obtain separate clearances from ministry of corporate affairs and there were over 800 items reserved for SSIs and no industrial unit could be setup within the municipal areas of all towns and cities and in the 'areas of influence' of 21 largest cities.
2. It was already realized that licensing was not serving its purpose (was to reduce regional imbalances, concentration of wealth, to be applied only to critical industries). Many committees were setup which underscored this reality but still none recommended its withdrawal. The system had created powerful rent seekers.
3. Licensing was creating underutilization of capacity.
4. Licensing was creating concentration of economic power.
5. Licensing was creating corruption as it gave discretionary power to the licensing authorities.
6. Licensing was creating regional imbalances. More than 60% of licenses went to Maharashtra, Gujarat, W Bengal and TN.

Q. What is your perception of the slowing down of industrial growth in India from the mid 1960s till the mid / late 1970s. (2009, II, 20)

Phase 3 (1980-91): Recovery

Overall Growth

1. Recovery: Overall: 5.6%, Agriculture: 3.5%, Industry: 7%, Services: 6.8%.
2. Overall manufacturing: 8% p.a. (up from 4.5% p.a. in previous period). This growth was fairly diversified.

Composition of Growth

1. Sharp jump in consumer goods and moderate in capital goods: Capital goods: 8% p.a (up from 6.5% p.a. in previous period). Consumer durables: 11% p.a. (up from 8% p.a. in previous period). Consumer non durables: 11% p.a. (up from 4% p.a. in previous period). Consumer non durables sector was a slow growing sector but the process of domestic liberalization provided a major boost to this sector in this period.
2. Organized vs unorganized sectors: Between 1966-67 to 1989-90, organized sector grew @ 5.7% p.a.
3. 6th FYP spent 14% on industry, 7th FYP spend 12% on industry.

Causes of Industrial Recovery

1. Liberalization of policies.
2. Expansionary fiscal regime.
3. Growth of agriculture sector: As GR spread, agriculture growth picked up @ 3%.
4. Growth in service sector: This led to increased demand for consumer durables.
5. Growth in infrastructure: There was a marked increase in infrastructure investment. Infrastructure investment grew by 10% in first half of 80s and then to 18% by 1987-88. In 70s its increase was only 4%.

Industrial Policy, 1980

1. Concept of economic federalism i.e. to setup few nucleus plants in the district and let ancillary and cottage industries grow around it.
2. The limits for MSME definitions were increased. To promote handloom, khadi etc. so as to develop village areas.
3. To correct regional imbalances through encouraging regional dispersion of industries.
4. Unauthorized excess capacity was to be checked.
5. Automatic extension of capacity by 25% over 5 years for some more industries.

Early Liberalization Efforts

1. Exemption from licensing: In 1978 the limit for exemption was raised to Rs. 3 cr. In 1983 it was raised to Rs. 5 cr and then in 1988 to Rs. 15 cr.
2. Relaxations to MRTP and FERA companies: MRTP limit was raised from Rs. 20 cr to Rs. 100 cr in 1985. In 1983 MRTP companies were allowed to setup without approval new capacities in industries of high national importance and import substitution potential. In 1985 government allowed unrestricted entry of FERA companies into 21 high technology sectors.
3. Delicensing: Government began to delicense many industries and drugs subject to the condition they didn't fall under MRTP or FERA and not reserved for SSI.
4. Re-endorsement of capacity: The undertakings which reached 80% capacity utilization were allowed fresh capacity extension of 25% in 5 years.
5. Broad banding of industry: Instead of minor classifications, broad sectors were defined which enabled manufacturers to better cater to the demand without requiring additional approvals.
6. Minimum economies of scale: This was defined for some industries and units were encouraged to expand till they reached this limit.
7. Incentives for export promotion: 100% export oriented units were given further exemptions. They were allowed to buy their import content @ international prices. MRTP and FERA companies were allowed.
8. Backward area promotion: MRTP and FERA companies were allowed to setup units in backward areas.
9. Enhancement of investment limit for SSI: They were increased.

Phase 4.1 (1990s)

Overall Growth

1. Stagnant share of industry in GDP: In 1990, industry constituted 24% of GDP, in 2000 25% and today 27%. Compared to other developing countries this is very less (50% in China, 30% in Brazil and 40% in thailand).
2. Overall growth slowed down form 80s. Based on IIP, general industrial production growth slowed down from 7.8% in 80s to 5.7% in 90s. Manufacturing grew @ 7.6% in 80s while only 6.3% in 90s, mining fell from 8.4% to 3.3% and electricity generation from 9% to 6.6%. Overall the share of manufacturing rose in the industrial production while that of mining and electricity fell.

Composition of Growth

1. Sharp deceleration in capital and basic goods while rise in consumer goods: Capital goods and basic goods showed a marked decline in the 9th FYP as compared to 80s and early 90s. Capital goods declined from 9% to 4.5% while basic goods declined from 7.4% in 80s to 4%. Only consumer and intermediate goods showed an increase from 6% to 6.3% and from 5% to 9% respectively.
2. Within the basic goods sector metal and metal alloys have lost. In the intermediate goods sector, chemical and chemical products have gained.
3. Fall in relative prices of capital goods due to import competition: Share of capital goods in the manufacturing output peaked in 1984-85 and has remained stagnant since. But its relative prices have fallen probably due to import competition. This means share of machinery in the GCF has gone up (due to fall in prices).
4. Shift in favor of registered manufacturing in 90s: While there was an investment boom in registered sector (due to fall in prices) the unregistered sector has suffered (due to lack of access to bank credit as SCBs are no longer forced to lend to them). Its share in total manufacturing GFCF has halved from 45% in mid 80s to 20% by the end of 90s. Share of registered manufacturing in total manufacturing increased from 63% in 1991-92 to 66% in 2003-04.

Reasons for Industrial Slowdown of 90s

1. The one time pent up demand as the economy opened up was met and economy relapsed to old ways.
2. There was a credit crunch due to tightening by RBI since 1995-96.
3. The proportion of corporate funds locked up in inventories and receivables went up steadily leading to a scarcity of working capital.
4. Lagged effect of slowdown in agriculture growth and hence demand. A study of land productivity of major crops in 80s vs 90s shows a clear decline in all except rice in 90s. This is perhaps a result of falling public investment in agriculture.
5. Slowdown in world economy and exports. Inverse tariff structure.
6. Slowdown in public investment. The resources spent in 8th FYP on industry were 8%, in 9th FYP were 5% and in 10th and 11th FYP were 4%.
7. Slowdown in infrastructure expenditure. GCF in infrastructure dropped from 6.1% in 80s to 5.8% in 90s. Share of infrastructure in GFCF declined from 30% in 1990-91 to 20% in 1998-99.

8. Rise in energy costs and lack of rise in prices of manufactured output.
9. Credit slowdown from banks specially to SSIs. In 90s growth of SSI credit decelerated to 11.5% from 19.5% in 80s. This was also reflected in a decline in SSI credit to total non food credit.

Q. Comment on the recent moves towards liberalization and their effects on Indian industry. (2007, II, 20)

Economic Reforms of 1991
Industrial Licensing

1. Licensing was abolished except for certain defence and strategic industries. Licenses not needed for capacity expansion as well.
2. Non-polluting industries could now be located close to the cities. No approval needed for industries outside this limit.
3. MRTP was kept alive (repealed and replaced in 2002 by Competition Act) but the focus is on increasing competition. Threshold limits were abolished. Pre-approvals are no longer required. The CCI only checks monopolistic behavior and scrutinizes mergers.
4. Projects where capital imports were required would be auto-approved if financed via equity infusion or imports constitute < 25% of investment.

FDI

1. Automatic FDI approvals with varying participation rates except a few sensitive ones. RBI needs to be notified just 30 days in advance of bringing funds.
2. Foreign Investment Promotion Board constituted to scrutinize FDI in other areas.

Foreign Technology

1. Automatic approval for technology agreements provided it is funded by equity infusion.

Public Sector

1. Disinvestment policy was adopted. Listing to bring about discipline and buybacks also allowed.
2. Sick industries to be referred to BIFR.
3. Focus will be on strategic, high-tech sectors where monopoly would be preserved. Thus areas reserved for public sector exclusively were reduced from 18 to 5 and subsequently to 3.
4. More professional management and greater autonomy. However, some arm twisting by the government like in case of LIC, forced buying of other PSU stocks or investment of cash surplus undermines the stated policy.
5. Public sector defence companies can now setup JVs with private companies under PPP.

Phase 4.2: After 2002
Overall Growth

1. Manufacturing growth was running high @ 13-15% pre-crisis, but in 2008-09 plummeted to 2.5%. Since then it tried to recover between 5-8% in subsequent 2 years, but in 2011-12 again fell back to 2.5%.

Composition of Growth

1. Faster growth in exports: Export based manufacturing grew @ 20% in 10th FYP as against 6% in 9th FYP.

IIP Statistics

1. IIP divides industry into - Mining & Quarrying (weight: 14%), Manufacturing (weight: 75%), Electricity Gas & Water supply (weight: 11%). In the past 2 decades, manufacturing has done best followed by EGW and then Mining & Quarrying. Machinery & Equipment and Chemicals have done well among manufacturing.
2. One weakness of IIP is that it considers only the registered industrial sector. A large part of industrial sector in India is unregistered and there is no way to capture the movements in it.
3. 2011-12: -2% (mining), 2.9% (manufacturing) and 8.2% (electricity) respectively, which moved the overall growth in the General Index to 2.8%.
4. 2012-13 : -2.5% (mining), 1.2% (manufacturing) and 4.0% (electricity) respectively, which moved the overall growth in the General Index to 1.0% (lowest in 2 decades).
5. 2013-14 (April - Sept): -2.5% (mining), 0.1% (manufacturing) and 5.9% (electricity) respectively, which moved the overall growth in the General Index to 0.4%.

IIP - Use Based

1. Industrial production can also be classified into basic goods (weight: 45%), capital goods (weight: 9%), intermediate goods (weight: 15%), consumer goods (weight 30% with durables as 8% and non-durables as 22%). Over the past 2 decades, capital goods performed best followed by consumer durables, followed by intermediate and then basic.
2. 2011-12: 5.5% (basic goods), -4.1% (capital goods), -1% (intermediate goods), 4.4% (consumer goods with durables @ 2.5% and non-durables @ 5.9%).
3. 2012-13: 2.3% (basic goods), -6.3% (capital goods), 1.2% (intermediate goods), 2.5% (consumer goods with durables @ 2.1% and non-durables @ 2.7%).
4. 2013-14 (April - Sept): 1.2% (basic goods), -0.7% (capital goods), 2.6% (intermediate goods), -1.3% (consumer goods with durables @ -10.9% and non-durables @ 7.3%).

Core Sector (weight 38% in IIP)

1. It includes - electricity, coal, crude, natural gas, oil products, steel, fertilizers, cement. Core sector grew @ 2.8% in 2008-09, 6.6% in 2009-10.
2. 2010-11: Overall: 6.6%. Coal: -0.2%. Crude oil: 11.9%. Natural gas: 10%. Petroleum refinery products: 3%. Fertilizers: 0%. Steel: 13.2%. Cement: 4.5%. Electricity: 5.6%.
3. 2011-12: Overall: 4.4%. Coal sector: 1.2%. Crude oil: 1%. Natural gas: -8.9%. Petroleum refinery products: 3.2%. Fertilizers: 0.4%. Steel: 7%. Cement: 6.7%. Electricity: 8.1%. India's mineral production breakup is coal (33%), crude oil (32%), iron ore (17%), natural gas (8%).
4. 2012-13: Overall: 3.6%. Coal: 6.4%. Crude oil: -0.5%. Natural gas: -11.1% Petroleum refinery products: 3.2%. Fertilizers: -12.2%. Steel: 3.6%. Cement: 9.9%. Electricity: 6.4%.
5. 2013-14 (April - May): Overall 2.4% (vs 6.5% last year) mainly due to declining output of crude oil, coal, fertiliser and natural gas.

Infrastructure
Trends

1. Falling share of public investment in infrastructure: Share of public sector in 3 main groups of infrastructure - EGW, transport, communications was 45% in 1990-91. This came down to 23% in 2005-06.
2. Infrastructure spending increased faster than GDP in 50s and 60s, slowed down in 70s and since 80s have kept pace with the GDP growth.
3. India spent 5% of its GDP in infrastructure in 2004-05, 8.5% in 2011-12 compared to 9% of China.

11th FYP

1. Targets: Civil aviation $10 bio (2%), Irrigation $65 bio (13%), Ports $2 bio (4%), Roads $75 bio (15%), Railways $65 bio (13%), Telecommunications $65 bio (13%) and power $165 bio (33%).
2. Increasing share of private participation: During 11th Plan, $480 bio were spent (more than double of that in previous Plan) and 36% came from the private sector. In 10th FYP, 20% came from private sector. Private participation is high in roads (35%), railways (20%), gas (32%), telecom (70%) and power (30%).

Bharat Nirman

1. Total $90 bio scheme in 11th FYP out of which 8% is for electricity, 10% is for roads, 4% is for telecom, 55% is for irrigation and 20% is for water supply and sanitation.

12th FYP

1. Infrastructure elasticity of growth: Transport services income elasticity is > 1. Civil aviation has grown by nearly 20% p.a. in the 11th Plan. Road traffic volumes, as measured by the consumption of automotive fuel, have grown by about the same rate as overall GDP. International trade volumes have been growing faster than GDP and will continue to do so indicating the need to build adequate capacity in the ports.

Power

1. India would need 975 MT of coal in 2016-17 (out of which power sector will need 850 MT) whereas supply will be only 715 MT i.e. a shortfall of 260 MT. So power ministry has proposed to reduce the target to 57 GW only (from 75 GW earlier target). Funding needs of $275 bio in 12th FYP.

Roadways

1. Funding needs of $125 bio in 12th FYP.

Tourism

1. The target is 1% of global tourism and 25 mm new jobs leading to forex earnings of $16 bio.
2. The tourism sector seeks an allocation of $4.5 bio up from $1 bio in 11th Plan.

Irrigation

1. The aim is to create 10 mha of additional irrigation under major projects, 10 mha of irrigation under minor projects.

Public Sector: Trends

Roongta committee's recommendations and CPSU reforms

It recomemnded minimum 3 years tenure irrespective of reaching the age of 60.

It recommended distinguishing between procedural lapses and malafide actions and swift punishment for malafide action.

Plans are afoot to fix a tenure of three years for chief executives of companies run by the central government in order to improve accountability, transparency and efficiency.

The proposal also calls for employees of a public sector enterprise to be made eligible to apply for the position of chairman and managing director even if they don't have two years of service left, according to several people aware of the development, who declined to be named. "In the absence of succession planning, highly competent officers in CPSEs (central public sector enterprises) are many times not left with two years or more of service when posts of functional directors/CMDs fall vacant. As a consequence, CPSEs lose the benefit of getting this pool of talent to occupy the deserving board level posts. Quite often, these competent executives lose their motivation while serving for rest of their tenures,"

The Roongta panel had highlighted the issue of so-called over-governance. "Compliance to summons from various quarters comes at a heavy cost of time and money. Over-governance, in turn, promotes conservative, cautious and risk averse organizational culture, with procedures being paramount and outcomes becoming secondary,"

The Roongta panel in its report strongly recommended that the tenure of the chairman and managing director, and directors in central public sector companies should be a minimum of three years, irrespective of their age at the time of the first appointment.

Phase 1: 1950 - 65

1. The focus on public sector increased. The share of public GCF in total GCF increased from 37% in 1st FYP to 52% in 3rd FYP.
2. There was an explicit shift in the policy regarding public sector from independence to mid 50s. Earlier public sector was expected to step in where private sector would find it difficult. Now it sought to control commanding heights of the economy.
3. Public sector accounted for 7.5% of GDP in 1950-51, 10% in 1960 and which rose to 14% in 1970-71. Public sector investment accounted for over 50% of total investment as against 25% in 1950-51.

Phase 2: 1965 - 80

1. There was a decline in GCF public sector to GDP from 9% in 1967 to ~5% in 1971.

Phase 3: 1980 - 90

1. In 1980s, the profits of PSEs declined sharply leading to a fall in public savings from 3.5% in 1980-81 to 1.1% in 1990-91.

Phase 4: 1990 - till date

1. Investment trend: Investment as a % of GDP was falling from ~10% in 1991 to ~ 5% by 2002-03. Since then it has been rising and is now close to 8% of GDP. Private investment has also seen a rise since then and looks like a case of crowding in instead of crowing out.
2. Productivity trend: Studies have shown (Nagraj) that despite declining share in investment as a % of GDP, public sector has maintained its share in GDP. This indicates higher capital productivity trend. Their ACOR (average capital output ratio) declined from 7 in 1981-82 to 4 in 2001-02. One way of higher capital productivity could come from a shift in investment towards labor intensive sectors but this is not the case as no such shift has been noticed. Share of infrastructure in public GCF has gone up from 33% in 1973-74 to 54% in 2001-02.
3. Improved profitability: In 2010-11 PSUs made a profit of ~$19 bio (up from $5 bio in 2001-02) on assets of ~$190 bio (up from $75 bio in 2001-02) i.e. 10% RoA. They contribute ~$30 bio to the central exchequer. Total market cap is $300 bio. The losses of loss making CPSEs have gone up from $2 bio in 2001-02 to $4 bio in 2010-11. But the profits of profit making CPSEs have gone up from $7 bio in 2001-02 to $23 bio in 2010-11. Number of loss making CPSEs has declined.
4. Fall in employment: It is declining. It even turned negative since 1990s.
5. Total contribution in GDP was 7% for CPSEs in 2004-05 and 12% including state PSEs. Overall contribution of public sector is 25% of GDP out of which 9% comes from sovereign duties and 2-3% from railways and other departmental entities. Their exports are ~$20 bio while imports are $105 bio leading to a trade gap of $85 bio.

Identifying the Weak Links

1. Plant load factor has increased from ~45% in 1980 to ~75% now. Savings of NDEs has gone up from ~2% in 1991 to ~4% of GDP now. This has been mainly on account of increase in savings of PSBs. The profitability of CPSEs (net profits to capital employed) has been rising since 80s and the rise has been even sharper since 90s.
2. This means the problem is in railways, electricity discoms, irrigation and road transport department. In case of electricity, despite a rise in PLF the operating ratio has fallen. Similarly in railways and roadways. Much of these problems have to do with pricing decisions.
3. The reasons for improvement in CPSE performance could be - (a) hardening of budget constraint: 1960s saw ~ 100% budgetary support while now < 15% is from budget for non financial CPSEs. (b) managerial autonomy, (c) growing competition, (d) better accountability.

Public Sector vs Private Sector

1. If government doesn't build rural roads no one will.
2. Problem with public sector is it is not afraid of bankruptcy. Thus it operates only under a soft budget constraints and can severely limit competition.
3. Need to have a regulator. But the regulator should be unbiased. If there is a PSU as well in the industry then the private companies will feel that the umpire will not be biased. Hence they will demand a higher return on their investment which will curtail growth.
4. Strategic sectors like banking, hydrocarbons, presence of government is essential.
5. Private investment in agriculture can't fill the gap of public investment in the sector and the consequent impact of falling rural demand over the industry.

Q. Critically examine the arguments usually put forward in favor of disinvestment of public sector enterprises. (2009, II, 20)

Q. Whether public and private investments in India are complementary or competing? (2009, II, 20)

Q. Is privatization a boon or a bane for India? Discuss (2007, II, 20)
Public Sector Policy of India
Before 1991

1. The management of the PSEs was full of general administrators and not professionals. They along with their political bosses used to treat PSEs as their fiefs and there was too much of political influence. Work ethics were poor and PSEs served only as huge wage bill sources without any commensurate productivity.
2. In many cases populist policy interventions led to unsustainable losses for the PSEs.

Phase 1 New Economic Policy, 1991
There was a clear message of decreasing government commitment.

1. Disinvestment to begin. Government decided to disinvest up to 20% of equity in selected PSEs in favor of mutual funds and FIs.
2. Reduction of sectors reserved for public sector.
3. Policy for sick CPSEs to be same as that for private sector.
4. Greater autonomy and accountability to management.

Phase 2 Rangarajan Committee Recommendations (1993)

1. Up to 49% disinvestment in sectors reserved for public sector.
2. Industries which have a dominant market share or government may have a strategic interest, disinvestment may be done up to 26% stake remaining.
3. 100% disinvestment in all other sectors.

Phase 3 Disinvestment Commission (1999)

1. It recommended a shift from public offer route to strategic trade sales with transfer of management for bulk of industries.
2. Industries would be classified as strategic (arms, nuclear, railway) and non-strategic. For non-strategic, disinvestment up to a residual 26% would be non-automatic and done on a case by case basis.
3. Sale of profit making PSUs done via the strategic trade sales method.

Phase 4 UPA Government 2004 Onwards

1. Strategic trade sales route gave way to public offerings. All large PSUs to be listed on stock exchange and minority shareholding offered to public. Strategic sales means giving management control. It can be different from divesting below 51%.
2. PSUs will not be disinvested beyond 51%. Disinvestment target of $6 bio in 2012-13.
3. National Investment Fund setup for proceeds of disinvestments which would be used to fund CSS and to provide capital to profit making PSUs.
4. New PSUs are still being created (220 old and 28 new as in March 2011). The new ones are mainly subsidiaries or SPVs.

Iron & Steel
Pre-Independence
Nature & Character

1. It was localized due to concentration of necessary raw materials in a few locations as well as bulky nature. Jharkhand, Chattisgarh, Odisha main centers.
2. It was oriented towards domestic consumption mainly except during wars. It catered to needs of Indian Railway, £ government etc.

Post-Independence
Phase 1 (1947-71)

1. State policy. Private sector was disallowed except for existing houses, they couldn't expand, government controlled major resources including fx. Licensing.
2. Obsolete Technology. Even public sector lagged.
3. Production increased slowly from 1 MT to 3 MT by 1971.

Phase 2 (1971-91)

1. Restrictions were relaxed to some extent on the sector. Output increased from 3 MT to 13 MT by 1991.

Phase 3 (from 1991)

1. Sector completely opened up. Capacity is 90 MT in 2011-12 (China has 850 MT) and is projected to be 115 MT by 2017. Finished steel production was 70 MT in 2011-12 (China produced 700 MT). 20 MT was exported while 33 MT was imported in 2011-12.

Current Problems

1. Raw material sourcing. Coking coal in particular is scarce. But coking coal prices are coming down and steps are being taken to move to alternate technologies. There is a shortage of natural gas for gas based steel plants. This shortage has to be met by costly imports which affects the financial viability of the plants.
2. Illegal mining and subsequent bans.
3. Environmental clearances. Land acquisition issues.
4. India has increased the export duty on iron ore from 20% to 30%. This and the SC ban has led to a fall in iron ore exports from 90 MT in 2010-11 to 60 MT in 2011-12. India produces 210 MT of ore (compared to China 1.3 bio).
5. Steel demand has grown by 10.6% p.a. form 2009-10 to 2011-12 while the production has grown @ 8.7% only. India is 4th largest crude steel producer in the world.

Agriculture

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Source: http://www.business-standard.com/article/economy-policy/we-re-compounding-one-support-price-stupidity-with-another-one-on-stock-sales-abhijit-sen-113052200022_1.html?utm_source=feedly

Micro Irrigation

A scientific method of irrigation carrying desired water and nutrients direct to the root zone of the plant, drop by drop.

National Mission on Micro Irrigation (NMMI)

- NMMI was launched as a Mission from June 2010.
- Aim of NMMI is to boost converge of micro irrigation activities under major government programmes such as National Food Security Mission (NFSM), Integrated Scheme of Oilseeds, Pulses, Oil palm & Maize (ISOPOM), Technology Mission on Cotton (TMC) etc. for increasing water use efficiency, crop productivity and farmers income.

The salient features of the scheme are:

- Small & marginal farmers would get subsidy of 60 per cent and for other beneficiaries, 50 per cent for an area up to 5 hectare under the Government of India share.
- Introduction of new components with advanced technologies on micro irrigation like semi permanent sprinkler system, fertigation system, sand filter, different types of valves etc.
- Release of Central share to the State Implementing Agencies instead of districts.
- The scheme also has an effective delivery mechanism that calls for close coordination among the beneficiaries, the Panchayats, the State Implementing Agencies and the registered system suppliers for the increased area under gross cultivation.

Cyanobacteria

- Cyanobacteria, also known as blue-green bacteria or blue-green algae, and Cyanophyta, is a phylum of bacteria that obtain their energy through photosynthesis.
- The name "cyanobacteria" comes from the color of the bacteria.

Why is it in news?

- Scientists at University of California have engineered used Cyanobacteria to convert carbon dioxide into 2,3 butanediol, a chemical that can be used to make paint, solvents, plastics and fuels.
- Although the productivity is very minute but researchers are hopeful that it can be implement on large scale after improving the yield.
- If this is done successfully, **it can reduce our dependence on fossil fuels to get industrial chemicals**.

Organic fertigation

- Fertigation, a practice of conjunctive application of fertilizers and water to crop plants is an inevitable component of modern day scientific agriculture.Soluble fertilizers like urea, potash and a wide variety of fertilizer mixtures available in the market could be well mixed with irrigation water, filtered and then passed through the irrigation unit.
- In the normal sense it refers to the conjunctive application of chemical fertilizers and water.In the present situation of increasing demand for organic products and an inclination to organic farming practices, the scope for "Organic Fertigation" is very large.

Hurdles

- Solubility of organic manure.
- Solid residues are more in organic manures. The best filtering mechanism will be required to screen out the solid wastes.
- Required standardization the filtration techniques for organic manures.

System of Rice Intensification

SRI concepts and practices have continued to evolve as they are being adapted to rain-fed (unirrigated) conditions and with transplanting being superseded by direct-seeding sometimes. The central principles of SRI according to Cornell University are:[2]

- rice field soils should be kept moist rather than continuously saturated, minimizing anaerobic conditions, as this improves root growth and supports the growth and diversity of aerobic soil organisms;
- rice plants should be planted singly and spaced optimally widely to permit more growth of roots and canopy and to keep all leaves photosynthetically active; and
- rice seedlings should be transplanted when young, less than 15 days old with just two leaves, quickly, shallow and carefully, to avoid trauma to roots and to minimize transplant shock.

Land Metrics

1. Gross Cropped Area (GCA) = Net Sown Area (NSA) + Area sown more than once.
2. Cropping Intensity = GCA / NSA.
3. Net Irrigation Intensity = NSA Irrigated / NSA.
4. Gross Irrigation Intensity = GCA Irrigated / GCA.
5. Operational Land Holding(OLH) = Land Owned - Land Leased Out + Land Leased In.

Classification of Farmers

1. Landless Labor: OLH = 0 hectares.
2. Marginal Farmer: OLH (0,1] hectares.
3. Small Farmer: OLH (1,2] hectares.

4. Medium Farmer: OLH (2, 10] hectares.
5. Large Farmer: OLH > 10 hectares.

1. Commercialization of Agriculture
Factors Responsible

1. £ utilitarians, their free trade policy, economic colonialization of India as it became a raw material supplier.
2. Cash based economy encouraged by £ coupled with huge LR demand.
3. Breakdown of self-sufficiency of villages. Indian economy became closely inter-linked and also linked with international markets. Need to balance trade of China led to cultivation of opium.
4. Development of means of transport like railways, Suez canal.
5. Coercive practices followed by £ backed by legislations. £ capital.

Pattern of CoA

1. It was a coercive process and exploitative.
2. It involved plantations where land was owned by € planter and labor was hired. It also involved indigo type cultivation where a contract was signed with the peasant.
3. It involved regional development only. Only some pockets were suitable for some crops.
4. The crops were cultivated keeping £ needs in mind. The cultivation of Indigo declined after the synthetic dye came up, opium grew till 1900 then decline as China stopped importing opium. During US civil war, cultivation of cotton was pumped up. Wheat export began to increase to £ and it was produced in areas in Maharastra despite not being a staple crop in the region. Bengal rice was exported to China, SE Asia.

Q. Discuss the process of forced commercialization of agriculture under the colonial rule. (2009, II, 20)
Impact

1. Volatility killed. Widespread poverty. Coercion. £ grip on India increased.
2. Famines, agricultural indebtedness.
3. Revolts, growth of nationalism.

2. Land Tenure System
Pre-£ System

1. Land was owned by the tiller so long as he paid revenue. The zamindar was only a revenue collector and had no police / judiciary powers.
2. Land was not tradable mainly because (a) Consent of village community was needed and it generally didn't come for village outsiders. (b) Pressure on land was not so much. (c) Social factors where association with land was considered a mark of respect.

£ System

1. PS made zamindar the LL and gave him judiciary / police powers. He could evict a peasant @ will and often did so as pressure on land had increased substantially. So peasant didn't make any investment in land. Zamindar also didn't make an investment as his zamindari rights could be withdrawn on non-payment of revenue.
2. Reckless Renting: Due to higher pressure on land and combined powers in the hand of zamindar, he began to extract much higher LR over and above what was payable.
3. Absentee LLism: It developed and it led to further exploitation of peasantry as he had to pay higher rents to feed all the mouths in the revenue chain.
4. Agriculture Indebtedness: Increased due to high LR demand. Since land couldn't be pledged as security (as the owner was zamindar), personal jewelry and even bonded labor was pledged. The institutional credit was virtually nil.
5. ~ 57% land was under PS, 38% under ryotwari and 5% under mahalwari system.
6. tenants were of 3 types - (a) Occupancy tenants who had security of tenure, inheritable rights and could claim compensation from LL for any improvement on land. (b) Tenants at will, and (c) Sub tenants.

3. Land Reforms
Reforms

1. Zamindari abolition acts: All states passed anti-zamindari acts in a staggered way and in paper zamindari was abolished. Even in Ryotwari and Mahalwari areas, moneylender zamindars were abolished.
2. Tenancy regulation: To put a ceiling on rent payable, to make sure evictions don't take place except as per law and in the event of eviction for personal cultivation, at least a minimum land is left with the tenant.
3. Loan Waivers: All principal / interest dues to moneylenders were waived
4. Land ceiling: There were 2 rounds of reforms legislations - one in 50s and other in early 70s.
5. Consolidating scattered land holdings:

Drawbacks

1. Land ceiling acts: There was often along delay between the introduction, passage and notification of an Act. This delay was used by zamindars to exploit the loopholes and evade the laws. They made *benami* transfers, transfered land in the names of other members of a households, fired their tenants (the acts had a provision that land will belong to the person cultivating it for x years). Further, these Acts often had complicated provisions leading to inefficient implementation. By 1992 only 2 mha land which is < 2% was declared as surplus and distributed among 4.76 mm peasants. This is amazing in a country where over 57% of the cultivated land was under zamindars and 38% under ryotwari. In J&K 17.5% of total cultivated land was distributed like this, in W Bengal 6.5% and in Assam 5%. In all other states it was negligible. West Bengal's share of total surplus land distributed was almost 20% of the all-India figure although the state accounts for only about 3% of India's land. The land ceilings were often fixed very high. National guidelines proposed 12, 18 and 30 acres respectively for irrigated land with 2 crops, irrigated land with 1 crop and dry land respectively. Major states like UP had 18, 27 and 45 respectively, Bihar had 18, 25 and 45 respectively, Haryana, Maharashtra and MP had 18, 27 and 54 respectively, Rajasthan had 18, 27 and 175 respectively, Punjab had 17, 27 and 51. Only W Bengal and Kerala had it below the proposed limits. Even today bottom 62% land holdings account for 19% of area under cultivation while largest 6% account for 37% area.
2. Tenancy laws: Very difficult to implement due to failure of land ceiling acts and consequent pressure on land. Decline in tenancy led to eviction of tenants and rise in landless labor as it contained a provision of self cultivation of land.@ the eve of reform ~50% of the area was under tenancy which has come down to 15% now as tenancies have gone underground. This means a loss of access to 35% to the tenants. Moreover in UP and W Bengal sharecroppers were not even considered to be tenants! There were no provisions to check the voluntary surrender of land. 1st FYP proposed a ceiling of 25% but Punjab, Haryana, TN and AP (varies from 30 - 40% in these states) have not observed this limit. Moreover it is useless. By 1992 ownership rights had been conferred upon 11 mm tenants on some 6 mha of land which is < 4% of cultivated area. Even 97% of this land was confined to Assam, Gujarat, HP, Karnataka, Kerala, Maharashtra and W Bengal. Its only in W Bengal and Kerala that peasants received some meaningful benefits. W Bengal and Kerala accounted for 12% and 23% respectively, of the total number of tenants conferred ownership rights (or protected rights) up to 2000, despite being home to only 7% and 2.3% per cent of India's population respectively.
3. Zamindari abolition laws: Their biggest flaw was they could obtain land for 'personal cultivation' which was defined loosely to include personal supervision by the zamindar or any member of his family! They were allowed to evict tenants to get land for personal cultivation till the ceiling and in the names of their family members beyond the ceiling.
4. Consolidation of land holdings: On the national scale only 1/3rd of the consolidable area has been consolidated. Punjab and Haryana have been able to complete the task. Some states have not even begun. A common complaint is rich peasants get the best lands while small peasants get marginal lands. So a major area rule was proposed i.e. peasant would be given the holding where majority of his land was there. But it further led to eviction of tenants as the landlord will find it more suited for personal cultivation.

Indirect Effects of Land Reforms

1. Reduction of absentee ownership: There are enough studies to indicate that the quantum of absentee ownership in 70s was much less serious than in 50s. Absentee ownership had reduced much more in unirrigated areas than in irrigated areas. The transfer of land under the forewarning impact of tenancy and ceiling legislation to the resident cultivators was on a

much larger scale in dry areas.
2. The greed of the big landowners was kept in check.
3. Collapse of feudal structure.
4. It led to increase in landless labor as former tenants were driven out.
5. Rich peasants preferred to avoid wage related disputes with the new labor and thus preferred more mechanization.

21st Century Land Reforms - PC

1. Female empowerment.
2. Pro owner tenancy laws.

Ghatak (2007) Conclusions

1. Overall, land reforms seem to have had a negative effect on agricultural productivity. However there is considerable variation across types of land reforms and across states.
2. Decomposing by type of land reform, the main driver for this negative effect seems to be land-ceiling legislation. In contrast, the effect of tenancy reform, averaged across all states, turns out to be insignificant. However, in West Bengal, one of the few states where tenancy laws were implemented rigorously, the negative relationship between land reform and productivity is absent.
3. Finally, tenancy reform seems to have increased the inequality of operational holdings in India if we exclude West Bengal, which suggests that in anticipation of the new tenancy legislation, landlords could be engaging in eviction of tenants in states, other than West Bengal, where tenancy reform had been poorly implemented.

Besley Burgess (2000) Conclusions

1. Tenancy reforms are negatively correlated with agriculture productivity but help in reducing poverty.
2. Consolidation positively affects productivity but has no impact on poverty.
3. Ceiling have no significant effect on productivity or poverty.
4. Intermediary abolition leads to poverty reduction but has no impact on productivity.
5. Land reforms have had positive impact on agriculture wages.

Q. Evaluate the track record of land reform in India in its various aspects, bringing out inter-state differences. How would you interpret this record? (2009, II, 60)

4. Agricultural Issues

Structural Changes in Agriculture

1. Contribution to GDP, Employment, PCE: Contribution of agriculture to GDP = 13% in 2011-12 (down from 30% in 1991 and 55% in 1950-51). Contribution of agriculture to employment: 52% in 2011-12 (down from 70% in 1950-51 and 57% in 1990-91). Within the rural economy however, the share of non-agriculture income has increased. Experience from BRICS shows that 1% growth in agriculture is 2-3x more effective in removing poverty than a 1% growth in other sectors. Agriculture growth has remained well below GDP growth. From 1950-51 to 2011-12, its growth rate is 2.7%. From 1950-51 to 1980-81 the growth has been 2.3% and from 1980-81 to 2011-12 the rate has been 3.1%. In pre GR phase (1950-51 to 1967-68) agriculture growth was 2.5% vs 3.7% overall GDP growth. During phase 1 and 2 of GR (1967-68 to 1980-81) agriculture growth was 2.4% vs 3.5% overall GDP growth. During phase 3 (1980-81 to 1990-91) agriculture growth was 3.5% vs 5.4% overall GDP growth. Agriculture growth was 4.8% in 8th Plan (overall GDP @ 5.7%), 2.5% in 9th (overall GDP @ 6.6%), 2.5% in 10th (overall GDP @ 7.8%) and 3.2% in 11th Plan (overall GDP @ 7.8%). Not only is it less, it is also more volatile. The coefficient of variation in growth is 1.6 in past 1 decade which is 6x the CV of GDP growth. Agricultural heavyweights like Punjab, UP, W Bengal etc. have stagnated with 2-2.5% growth rates. States like Gujarat, Rajasthan and Odisha show much higher growth rates (7-8%) since 2004-05.

Table 2: Farm Size, Productivity, Agriculture Growth and Poverty in China and India

Particular	China	India
Average farm size, recent year: ha	0.6	1.21
Productivity/ha Kg 2008		
Paddy	6,556	3,376
Wheat	4,762	2,802
Maize	5,556	2,324
Groundnut	3,102	1,071
Sugar cane	73,114	68,877
Soyabean	1,703	1,042
Average annual agriculture growth rate (%):		
1990-2009	4.1	3.2
2000-09	4.4	2.9
Poverty based on $1 per capita daily income based on PPP 2005 (%):		
1981	84.0	59.8
2005	15.9	41.6

Sources: (1) FAOSTAT. (2) *World Development Indicators 2010*, World Bank. (3) *Selected Indicators of Food and Agricultural Development in the Asia Pacific Region, 1995-2005*, RAP Publication 2006/16, FAO RAP, Bangkok.

2.
3. Size of Operational Land Holdings: in 1970-71, it was 2.28 ha, in 1990-91 it was 1.55 ha and in 2005-06 it was 1.23 ha. Proportion of marginal holdings has increased too. Currently, 65% OHL are marginal, 18% small, 16% medium, 1% large. In 1960-61 small + marginal households accounted for 52% of the holdings. The combined impact of lowering income and smaller OHLs is a diversification into allied activities like horticulture, livestock and fisheries. In 1951, the ratio of cultivating households to total rural households was 75% which has dropped drastically. The dropped outs are now landless agricultural labor (>50% now) or in other allied activities. One of its causes is fragmentation of land which makes holding land economically unviable. The subdivision of landholdings has led to a decline in average size of land holding and more cultivators become small and marginal farmers. As economic and social forces push more people towards the landless spectrum, their land is being bought by large farmers who are becoming larger.
4. Changing Cropping Patterns: All major coarse grains show a decline in area under cultivation except maize where productivity has gone up as well. Area under pulses, fruits and vegetables and oilseeds has risen at their cost. In terms of productivity, introduction of Bt cotton has improved productivity by 70% since its introduction in 2002. Oilseeds and coarse cereals are other crops to show good productivity increase. Pulses, wheat and rice however have stagnated in productivity.
5. Changing Sectoral Composition: Declining relative incomes and smaller OHLs have forced diversification into livestock, horticulture and fisheries. The relative share of livestock in total agriculture production has gone up from 20% in 1991 to 25% in 2009-10, horticulture from 16% in 1991 to 20% in 2009-10 and fisheries from 3% to 5%. Horticulture and livestock is

Table 1: Share of Livestock in Gross Value of Output and Growth of Agricultural Sector (at 2004-05 prices)

State	% Share of Livestock in Value of Output of Agricultural Sector		% Annual Growth in Livestock Sector		% Annual Growth in Agricultural Sector		% Share of Livestock in Agricultural Growth	
	TE 1992-93	TE 2008-09	1990s	2000s	1990s	2000s	1990s	2000s
Andhra Pradesh	22.5	30.2	6.3	5.3	3.0	4.6	46.7	35.4
Assam	10.6	13.0	1.2	3.5	1.9	0.1	6.7	–
Bihar	28.7	36.8	6.2	7.4	6.6	3.9	27.3	69.1
Gujarat	19.6	25.4	5.3	6.2	3.4	5.0	30.0	31.4
Haryana	27.8	32.0	3.6	3.8	2.9	2.9	34.9	41.1
Himachal Pradesh	27.3	28.3	3.7	3.3	3.3	3.5	30.3	26.2
Jammu and Kashmir	25.4	33.3	8.5	4.0	3.1	4.5	68.4	29.8
Karnataka	17.5	20.6	5.4	0.9	3.0	1.1	31.1	16.7
Kerala	19.5	21.0	2.9	0.7	2.5	0.6	23.2	25.8
Madhya Pradesh	26.8	27.0	3.1	3.2	3.3	2.9	25.5	29.9
Maharashtra	22.1	20.1	4.0	3.1	3.9	4.1	22.9	15.0
North-eastern states	22.3	23.1	4.5	4.5	3.9	2.7	25.5	38.3
Orissa	10.2	18.6	4.2	7.7	0.4	3.4	104.3	42.3
Punjab	26.2	33.1	4.1	2.5	2.0	1.7	52.8	47.2
Rajasthan	33.9	38.5	5.2	1.7	3.3	2.3	53.2	29.3
Tamil Nadu	27.4	29.0	1.9	3.5	2.4	1.8	21.6	57.4
Uttar Pradesh	21.0	28.2	4.5	3.6	3.0	1.5	31.8	69.7
West Bengal	21.6	20.9	2.5	2.1	3.5	1.5	15.4	29.4
All India	23.3	26.8	3.9	3.6	2.9	2.7	31.1	36.3

going to drive the agriculture growth in next phase given the high value of the commodities. An interesting feature is that while marginal farmers hold higher proportion of livestock, landless labor virtually don't own any livestock. Their livestock was dependent on grazing in the commons and with the decline of the commons their livestock holdings declined as well. Studies indicate that the marginal impact of livestock growth on poverty is higher than the marginal impact of crop cultivation.

Table 10: Public Spending on Livestock Sector in India

	TE1992-93	TE2000-01	TE2008-09
Total spending (Rs crore at 2004-05 prices)[a]	3,739.60	4,156.10	4,726.10
Public spending % of total agricultural spending	13.6	9.9	4.6
Public spending as % of livestock VOP	3.6	2.8	2.3

6. Integration with the world: The reforms in 1991 led to liberalization of trade and devaluation of exchange rate. As a result, agriculture got more integrated with the world. Trade in agriculture to GDP agriculture has gone up from 5% in 1990-91 to 13% in 2010-11. In 1970s it was 3%. But this is still low compared to overall trade's share of 50% in overall economy. Agriculture exports as a part of total exports has also been declining from 45% in 1960-61 to 31% in 1980-81 to 8% now. Indian exports were $24 bio whereas imports were $11 bio giving a surplus of $13 bio. Cotton, marine products, oil meals, basmati rice and sugar are main exports. Main imports are vegetable oils, wood and pulses. Horticulture exports were $1 bio, spices $1.4 bio (Vietnam is leader in pepper, Guatemala in cardamom, China in chili). This has led to higher volatility in output prices at a time when input prices are steadily increasing.
7. Changing demand patterns: With rising income, per capita demand for cereals is going down and that for horticulture, livestock and pulses is going up. Clearly they should be the thrust areas for future growth.
8. Growing role of private sector: Share of public investment in total agricultural investment has gone down from 50% in 1980s to 20% now. The Green revolution of 1960s was driven by public sector but this time the Bt Cotton and hybrid Maize have come from private sector. Private sector is increasingly going to contribute, so right kind of incentive and regulatory structure needs to be framed.
9. Changes in productivity: Studies indicate that while output per hectare increased by ~ 60% between 1050-51 to 1979-80, output per worker remained stagnant in the same period. Similarly while in 1980s the yields in foodgrains grew @ 2.7%, the corresponding growth in 90s was only 1.4%. Rice yields went up from 1 tpha in 1960-61 to 1.7 tpha in 1990-91 to 2.1 tpha in 2009-10. Wheat yields went up from 0.85 tpha in 1960-61 to 2.3 tpha in 1990-91 to 2.8 tpha in 2009-10. Pulses yields went up from 0.54 tpha in 1960-61 to 0.58 tpha in 1990-91 to 0.63 tpha in 2009-10. Oilseeds yields went up from 0.5 tpha in 1960-61 to 0.8 tpha in 1990-91 to 1 tpha in 2009-10.

Statistics

1. Agriculture growth: 2.5% in 2011-12, 7.0% in 2010-11. In 1980s it was 3%, in 8th Plan it was 4.8%, in 9th and 10th Plans it was 2.5%. 11th Plan had a growth of 3.2%.
2. Food Grains: 230 MT, Rice: 100 MT, Wheat: 90 MT, Coarse cereals: 40 MT
3. Pulses: 18 MT. Area sown: target = 17 mha.
4. Cotton: 35 million bales (of 170 kg each), Jute: 11 mm bales (of 180 kg each).
5. Oilseeds: 30 MT.
6. Sugarcane: 350 MT.
7. Fruits: 95 MT, Vegetables: 135 MT.

Cropping Pattern

1. Rice: Productivity increased from 1.9 tpha in 2004-05 to 2.3 tpha in 2011-12. Growth rate: 1.36% in 1990-91 to 2000-01, 1.47% from 2000-01 to 2010-11
2. Wheat: Area: 26 mha in 2004-05 to 29 mha in 2011-12. MSP increased from Rs. 640 per quintal in 2004-05 to Rs. 1285 per quintal in 2011-12. Productivity increased from 2.6 tpha in 2004-05 to 3 tpha in 2011-12. Major increase in productivity in Haryana, Punjab and UP. Yield growth was 2.87% between 1990-91 to 2000-01 and 0.73% between 2000-01 to 2010-11.
3. Coarse cereals: Area: 29 mha in 2004-05 to 27 mha in 2011-12. Productivity: 1.1 tpha in 2004-05 to 1.6 tpha in 2011-12. UP, Maharashtra and Karnataka have shown maximum increase in productivity.
4. Pulses: Area: 23 mha in 2004-05 to 25 mha in 2011-12. Productivity: 0.58 tpha in 2004-05 to 0.63 tpha in 2011-12. MSP increased by 30%, budgetary allocation up 4x in this period for pulses. Accelerated Pulses Production Programme (A3P) is a part of NFSM and it seeks to promote new production and protection technologies in 1000 clusters of 1000 ha each. It has a e-pest surveillance programme as well to control pests and diseases.
5. Oilseeds: Area: 27 mha in 2004-05 to 27 mha in 2011-12. Productivity: 0.9 tpha in 2004-05 to 1.2 tpha in 2011-12.
6. Sugarcane: Area: 4 mha in 2004-05 to 5 mha in 2011-12. Productivity: 70 tpha in 2011-12.
7. Cotton: Area: 9 mha in 2004-05 to 12 mha in 2011-12. Productivity: 0.3 tpha in 2004-05 to 0.5 tpha in 2011-12.

Investment

Trends & Composition

1. GCF in agriculture to total GCF ranged between 11-14% in 1980s, 7-11% in 1990s and in last few years has been 6-8%. As a % of GDP, it was 1.9% in 1990-91 but is now 3.3%.
2. A more important indicator is GCF agriculture / GDP agriculture. This increased form 7% in 1st FYP to 11% in 5th FYP. Since then it declined till 8th FYP to 9%. But from 1991 onwards, a thrust has been there by government to increase GCF agriculture and today it stands @ 21%. This partly explains the increase in growth in 11th FYP.
3. Public investment's share in total agricultural investment has gone down from 50% in early 1980s to 30% in 1990-91 to 20% now. Private investment responds better to incentive structures in agriculture and hence there is a need to bring reforms in the incentive structure of agriculture. Public investment as a % of agriculture GDP was 5% in 1980s and fell to 1.8% in 2000-01 but rose again to 3.7% in 2006-07. But at the same time public investment is needed to develop basic infrastructure which can then crowd in private investment. Private investment is mostly undertaken in farm level and small activities and can't replace public investment. No canals are built via PPP! Moreover only few progressive states have benefitted from private investment and this has increased interstate disparities.
4. Investment in agriculture R&D is only 0.3% of agriculture GDP as against 0.7% in developing countries at large and 2-3% in developed countries. In the initial years of GR, it increased but then stagnated in 1980s and has since fallen.
5. Agricultural credit has gone up manifolds in past decade, but it has got its own issues.

Bharat Nirman (2005)

1. To connect al habitations with > 1000 population (500 in hills / tribal areas) with all weather roads.
2. To create 10 mha additional irrigation potential.
3. To construct 6 mm rural houses.
4. To provide potable water to all habitations.
5. To provide electricity to all villages.
6. To connect all villages with telephone.

RIDF (1995)

1. Its objective was to provide fund to the state governments and PSUs to enable them to complete delayed rural infrastructure projects.
2. But its resources are contributed by banks which may fall short of their PSL targets. But they find this a better way of lending than lending directly to the farmer and still be able to meet PSL targets and hence they have been diverting funds to this. So RIDF is not any additional source of funding.
3. State governments have been generally reluctant to borrow from RIDF as its rates are high. Disbursement has been only 60% so far.

Q. Analyze the recent trend of gross capital formation in agriculture. Has it, do you think, been responsible for the sluggish growth rate in agriculture? (2011, II, 30)

Q. "Declining public expenditure in agriculture is largely responsible for deceleration in growth in this sector in India." Critically examine the validity of this statement. (2010, II, 20)

Irrigation

Trends & Composition

1. Nearly 80% of public investment and 50% of private investment goes into irrigation projects. As a result the cropping intensity has gone up from 118 in 1970-71 to 140 in 2008-09.
2. But not only is there a gap between irrigation potential (140 mha) and irrigation potential created (110 mha) but also between irrigation potential created and utilized (85 mha). Thus GCA irrigated has increased from 17% in 1950-51 to 45% in 2011-12. Irrigation utilized is measured on the basis of gross irrigated area and not net irrigated area. Cultivable land is reported on the basis of net sown area.
3. Further groundwater is a major source of irrigation which has been over-exploited. Thus there is a need for institutional reforms, developing smaller irrigation projects and right incentive structures. One thing which can be useful is to separate agricultural and domestic phases in villages so as to provide more electricity to domestic phases.
4. Small and marginal farmers vs large farmers: Area under irrigation for marginal farmers has gone up from 40% in 1980-81 to 44% in 1990-91 and 51% in 2000-01. For small farmers it was 33% in 1980-81 to 36% in 1990-91 to 39% in 2000-01. For large farmers it was only 16% in 1980-81 to 22% in 1990-91 to 31% in 2000-01.
5. Inter state disparities: Inter state disparities in area under surface irrigation (as a proportion of total cultivated area) are considerably lower than disparities in the area under ground water irrigation. Moreover the proportion of area under surface irrigation has progressively declined over the years. Due to higher disparities in ground water irrigation and its rising share the overall irrigation area disparities have been rising over the years. UP has highest gross irrigated area (utilized) of 19 mha followed by Punjab (7.7 mha) and Rajasthan (7.3 mha). Punjab has highest irrigation intensity (gross irrigated area / net cultivable land area) of 183 followed by Haryana of 148 followed by UP of 98.

Challenges

1. Despite large investments though, irrigated area served by canals has not increased significantly in the past decade. A large number of major as well as medium projects have been going on for 30–40 years without completion whereas the normal gestation period is 15 to 20 years for major projects and 5-10 years for medium projects. There was a spill-over of 553 projects into the 11th FYP from previous FYPs and more than half of these were started by State governments without the approval of the PC and hence are not eligible for central assistance. Several have run into inter-state disputes. AIBP was launched to fund states complete the incomplete projects.
2. Gap between potential created and utilized exists in all states. One reason for this is that irrigation potential is calculated on the basis of the volume of water expected in the reservoir divided by a presumed depth of irrigation required for a presumed cropping pattern. However, the total water available is often less than assumed due to faulty project designs, faster siltation etc. There is also a widespread tendency for those near the headworks to appropriate much larger amount of water shifting to water-intensive crops leaving less water for tail-enders. All these developments are encouraged by lack of co-ordination across agencies and departments, and the inadequate or complete absence of involvement of water users through Water User Associations (WUAs). In places like Gujarat and AP where WUAs have been adequately empowered and provided autonomy they have demonstrated a great sense of ownership and the results have been positive.
3. Water scarcity will intensify in future with increase in population and demand for food, and the current water use practices cannot be sustained over the long run.
4. Inefficient water use in irrigation is also leading to environmental degradation via water logging and induced salinity.
5. Interstate inequalities have risen. While in the developed regions of north and north west ~ 95% of potential has been tapped, in NE only 25% has been tapped. In eastern and central regions it is < 50%.
6. The irrigation efficiency in the systems needs to be upgraded from the present level of 35% to about 60% in the surface water system and from 65% to 75% in the groundwater system. Even a rise of 5 percent irrigation efficiency can increase the irrigation potential by 10-15 million ha.
7. New micro-irrigation technologies include drip and trickle systems, surface and subsurface drip tapes, micro-sprinklers, sprayers, micro jets, spinners, rotors, bubblers, etc. Despite wide promotion, only about 0.5 million ha currently are under micro-irrigation.

The Way Forward

1. Modern techniques such as micro-irrigation, watershed management, rainwater harvesting and groundwater recharging.
2. The public sector has been spending funds to increase the net irrigated area without commensurate success. This indicates the need for demand and supply oriented reform measures. For this, a major exercise involving reform in water demand management and in the pricing of water and power are needed.
3. Major investments in research and development that enhance water use efficiency will be required. R&D should also happen towards growing the right quality and type of agricultural produce. Extension services take these technologies to the farmers need to be encouraged.

Seeds

Trends & Institutional Framework

1. The introduction of Bt seeds in maize and cotton have increased their productivity tremendously. The difference between Green revolution of 60s and now is that while earlier, introduction of seeds was from public sector, this time it is private sector companies which are developing and selling seeds.
2. The organized sector (public + private) accounts for 15% of seed distribution, rest is unorganized. Thus there is a need to protect farmers' rights as well as to incentivize seed development.
3. The Indian seed programme largely adheres to a limited generation system for seed multiplication in a phased manner. The system recognizes three generations, namely breeder, foundation and certified seeds.

National Policy for Seed Development, 2011

1. In order to harmonize NPSD, 1988 with the National Seed Policy, 2002, the former, has been revised in 2011 to streamline the procedures for import of seeds and planting material.
2. As per the revised policy, now a small quantity of wheat or paddy seeds can be imported into the country for trials under ICAR or on such farms which are accredited by the ICAR. After trial and evaluation for one crop season and satisfactory results therein, the importer can apply for bulk import of such seeds.
3. For coarse cereals, pulses and oilseeds, trial and evaluation can also be done on farms operated by the importer provided they follow the procedure and protocol developed by ICAR, and is under ICAR monitoring and supervision.

Protection of Plant Varieties and Farmers' Rights Act, 2001

1. *The Act provides for the establishment of a sui generis system for the protection of plant varieties and the rights of farmers on the one hand and to encourage the* development of new varieties of plants on the other.
2. Indian agriculture is dependent upon farmer-produced seed of varieties that are both maintained and further adapted to their local growing conditions by small-scale farmers. So India

wanted to acknowledge the rights of farmers arising from their contribution to crop conservation and development and the sharing of their knowledge on adaptive traits. It also wanted to encourage farmer-to-farmer exchange of new crop/plant varieties. So it evolved a sui generis system of plant protection which allows farmers to improve and adapt the seed in order to make it more successful in the local conditions.

3. The Act sets the requirements for plant protection as novelty, distinctness, uniformity and stability.
4. But the farmer is entitled to save use, sow, resow, exchange, share or sell his farm produce including seed of a protected variety. However he is unable to sell seed that has is branded with the Breeders name.
5. The Act also contains provisions for "benefit sharing" whereby the local communities are acknowledged as contributors of land races and farmer varieties in the breeding of "new" plant varieties.
6. It is these extra provisions granting rights to both breeders and farmers which makes the Indian system a *sui generis* method of protection. China and Thailand are other examples of countries that do not implement a UPOV style protection system.
7. It creates a Protection of Plant Varieties and Farmers' Rights Authority which registers plant varieties to protect the plant breeder's rights.

Seeds Bill, 2004

1. The Seeds Bill, 2004 aims to regulate the quality of seeds sold, and replaces the Seeds Act, 1966. All varieties of seeds for sale have to be registered. The seeds are required to meet certain prescribed minimum standards of germination, physical purity and genetic purity. Transgenic varieties of seeds can be registered only after the applicant has obtained clearance under the Environment (Protection) Act, 1986.
2. The Bill exempts farmers from the requirement of compulsory registration. Farmers are allowed to sow, exchange or sell their farm seeds and planting material without having to conform to the prescribed minimum limits . However, farmers cannot sell any seed under a brand name.
3. If a registered variety of seed fails to perform to expected standards, the farmer can claim compensation from the producer or dealer. The Bill provides for setting up a compensation committee that shall hear and decide these cases. But the Bill does not specify whether the committees will be set up at the national, regional, state or district level; that decision would determine whether farmers can easily access the compensation mechanism.

Challenges

1. There is a mismatch between the seed multiplication ratio from breeder seed to foundation seed and from foundation seed to certified seed, which needs to be addressed.
2. Comprehensive and authentic databases on seed production and trade in India by public and private sectors as required under the seed and plant variety laws need to be built up. The seed chain and the norms for quality control should be followed without any compromises or shortcuts.
3. For horticulture crops which have a long gestation period , it is imperative to ensure that only such varieties are imported that are suited to Indian conditions.
4. In rainfed areas, wastage of seeds due to prolonged dry monsoon spells immediately after sowing is a very common occurrence. In such a situation maintaining seed diversity is important from the point of view of reducing rainfall risks. There has to be an assured availability of a second batch of seeds for repeat sowing. Drought resistant seeds need to be developed.
5. A number of transgenics particularly in cotton and vegetable crops, are sought to be introduced into the country. The potential loss of production on account of non introduction of transgenics has to be carefully balanced against the dangers that transgenics may pose to ecology.
6. Climate change considerations have to be kept in new seeds.
7. Timely delivery to farmers of high-yielding varieties requires big improvements in the system that connects plant germplasm collections, plant breeding and seed delivery. Thus increased public support in this regard is essential.

Fertilizers

Trends & Composition

1. Fertilizer use has gone up ~4x from 1991 (70 kgpha to 290 kgpha in 2011-12) but it still remains far behind China (395 kgpha) and Egypt (388 kgpha). Currently India is an importer but it is expected to achieve self sufficiency in N fertilizers by 2017. Focus is also on enhancing the use of Single Super Phosphate (SSP) fertilizer which covers both for P and K. This fertilizer is not imported at all. The NPK balance is deteriorating. So the government has decided to move to a nutrient based subsidy regime.
2. Small and marginal farmers vs large farmers: Marginal farmers' consumption increased from 55 kgpha in 1981-82 to 99 kgpha in 1991-92 to 175 kgpha in 2001-02. Large farmers however only used 27 kgpha in 1980-81 to 54 kgpha in 1991-92 to 68 kgpha in 2001-02. In unirrigated area, marginal farmers used 24 kgpha in 1981-82, 58 kgpha in 1991-92 and 96 kgpha in 2001-02. Large farmers however only used 9 kgpha in 1981-82 to 19 kgpha in 1991-92 to 22 kgpha in 2001-02.
3. Very high variability has however, been observed in fertilizer consumption among the states. While consumption is 237 kgpha in Punjab and 226 kgpha in AP, it is 81 kgpha in MP, 58 kgpha in Odisha, 48 kgpha in Rajasthan and < 5 kgpha in some NE states.
4. Urea: consumption is 30 MT, production is 22 MT, imports are 8 MT. Phosphorus (DAP + MOP) consumption is 14 MT, production is 4 MT, imports are 10 MT. NPK consumption is 11 MT, production is 8 MT and imports are 3 MT.

Micro and Bio Fertilizers

1. Recently Fertilizer (Control) Order, 1985 has been revised to allow for customized fertilizers including those fortified with micro nutrients and also bio fertilizers.
2. Five bio-fertilizers (rhizobium, azotobacter, azospirillum, phosphate solubilizing bacteria and mycorrhizae) and three organic fertilizers (city waste compost, vermi-compost and castor de-oiled cake) have been included in the FCO to facilitate their us

Fertilizer Subsidies

1. Overall composition: Fertilizers: ~50%, Power: ~17%, Irrigation: ~13%. Empirical studies show that marginal reduction in poverty and output elasticity from subsidy is less than that from investment. Subsidies crowd out the investment as well. They may also promote inefficient methods like distorted use of fertilizers, electricity. So they should be replaced by increased investment.
2. In 1992, government freed up P& K fertilizers. This led to a sharp increase in their price and a deterioration in the nutrient balance (from 4:2:1 recommended to 10:3:1 in 1996-97). Subsequently ad hoc subsidies were given on P&K as well to restore nutrient balance. Then in 2011, nutrient based subsidy scheme was started which is applicable to P & K fertilizers. As a result nutrient balance has been restored to recommended levels.
3. Nutrient based subsidy means government fixing the subsidy according to the nutrient content of the fertilizer and reimbursing the producer who sells at cost (which is variable) - subsidy (which is fixed) @ a MRP which is ~50% of the cost. In addition to P & K, micro nutrients carry additional subsidies. Urea MRP is fixed by the government and private producers are not reimbursed. So private production is a loss making venture.
4. In 2011-12, $13.5 bio of fertilizers subsidies were given (urea getting $6.5 bio and P&K getting $7 bio). MRP to farmers covers ~50% of the cost. Budget estimate 2012-13 put the fertilizers subsidy bill @ $12 bio with a reduction in subsidy on decontrolled (P & K) fertilizers (urea getting $6.5 bio and P&K getting $5.5 bio). Subsidy bill in 2010-11 was $12.5 bio with urea getting $4 bio and P&K getting $8 bio.
5. But as a result of the subsidy deregulation the retail prices of K and P fertilizers have gone up ~ 3x. There are also doubts over whether the subsidy is reaching the farmers and hence the government has asked the manufacturers to furnish cost and other data. It is argued that the P and K are almost wholly imported but still a rise of 3x is not justified despite INR devaluation. $ prices have in fact softened in recent months. This points to the dealers pocketing subsidies and profits.

New Urea Investment Policy, 2008 (Abhijit Sen Committee Recommendations)

1. It was based on import parity price with provision of floor and ceiling for determining the producer's price of urea produced from new investments.
2. It failed to attract much investments due to lack of any transparent gas price pass through mechanism. Gas prices account for 80% of the production costs.

New Urea Investment Policy, 2012

1. Its target is to attract investments worth Rs 35,000 crore to increase domestic production by 8 MT.
2. It assures the investors of a 12 - 20% post-tax return on their capital invested. To ensure this return, the government will cover the entire cost of the natural gas.

Power Subsidies

1. Studies have found that state boards are able to recover only 10% of the cost of electricity supplied to agriculture. Rajasthan + Gujarat + maharashtra account for 50% of the total power subsidies while the southern states account for 25%. This is possibly because they are more dependent on ground water.
2. Farmers would prefer to pay an amount for uninterrupted power rather than having inadequate free power. Anyways the shortfall of power has to be compensated by diesel engines which cost Rs. 12 per unit.
3. We need 'smart' subsidies - subsidies which are better targeted, differential to keep local variations in mind (rain fed vs irrigation, small farms vs large farms), better delivery vehicles (like debit input cards where the farmer is allotted a total amount and he can chose the composition of subsidies himself which will also stop overuse of vital resources like water).

Farm Mechanization

Trends & Composition

1. Farm mechanization level in India is between 30 - 40% in various agriculture activities. Empirical studies show states with greater availability of farm power have higher productivity.
2. Greater degree of farm mechanization is also incentivized by MGNREGS.
3. In 1971-72, share of manual power (labor + animals) was 63%. In 1991-92 it was 27%. in 2009-10 it was 13%. Power used per ha has grown from 0.4 kW in 1970-71 to 0.9 kW in 1991-92 to 1.7 kW in 2009-10 (again low compared to China and Egypt). But growth rate of farm mechanization has been only 5% p.a. in last 2 decades.
4. Farm mechanization has been confined only to a few peasants and in a large way. Coupled with the fact that trend is towards smaller OHLs, farm mechanization in India may hit a wall unless reforms are introduced.
5. As a result of reforms and institutional push, easy availability of formal financing and capital subsidy especially on tractors propelled growth in farm mechanization.

Farm Mechanization and Climate Change

1. Climate change has necessitated a switching over to machine assisted resource-conservation techniques such as zero-tillage, raised-bed planting, precision farming, drip or sprinkler irrigation, etc.
2. Farm mechanization has now become more relevant in mitigating the effect of climate change by readjusting crop sowing schedules. For example, the climate change-driven early onset of summers in the northern states has often resulted in wheat yield dropping by 1.5 quintal per hectare with every one week's delay in its planting after mid-November. This loss can be averted by sowing wheat early, which is possible only if the previous paddy crop is harvested mechanically and wheat is planted with zero-till seed drills that do not require ploughing the land.

Challenges

1. Structural issues like high procurement cost, adverse economies of scale, lower credit worthiness, etc. have resulted in an automatic 'exclusion' of the majority of small and marginal farmers in India from the benefit of farm mechanization. As a result, farm mechanization has developed a stronger bias towards larger land holdings (NSSO 2005).
2. Mechanizing small and non-contiguous group of lands is against 'economies of scale' especially in operations like land preparation and harvesting. With continued shrinkage in average farm size, more and more farms will fall into the adverse category thereby making individual ownership of agricultural machinery progressively more uneconomical.
3. Moreover, farm mechanization is capital intensive and thus it remains beyond the reach of small and marginal farmers. Custom hiring centres could have been an alternate option. But, these centres need a minimum scale for efficient operation as the activity is capital intensive. They also have a longer gestation period due to lower asset utilization on account of the seasonal nature of agriculture demand. There is a limit to which hiring centers can provide an alternative because of uncertain climate and lack of institutional arrangements.
4. Higher risk due to 'uncertain demand' and 'immature market' has barred seasoned business entities from entering this segment. First generation entrepreneurs willing to establish these centres face a significant 'entry barrier' on account of non availability of financing either in the form of venture capital or institutional loans. With the level of NPAs continuing to remain significant, it is unlikely that the risk perception of financial institutions will change in the near future. As a result, there is virtually a 'complete market failure' in this segment.
5. Intensive research on farm mechanization is also not adequate as it is a very capital intensive activity.

National Mission on Agricultural Mechanization (NMAM)

1. Increasing the reach of farm mechanization to small and marginal farmers and to the regions where availability of farm power is lower.
2. Offsetting adverse 'economies of scale' and 'higher cost of ownership' of high value farm equipments by promoting 'Custom Hiring Centres' via rural entrepreneurship' model.
3. Passing on the benefit of hi-tech, high value and hi-productive agricultural machinery to farmers through creation of hubs for such farm equipments.
4. Promoting farm mechanization by creating awareness among stakeholders through demonstration and capacity building activities; and
5. Ensuring quality control of newly-developed agricultural machinery through performance evaluation and certification at designated testing centres located all over the country.

Agriculture Labor

Trends

1. Cost of cultivation data shows that labor accounts for more than 40% of the total variable cost of production in most cases.
2. In 1881 landless labor numbered only 7.5 mm. In 1921 they numbered 21 mm or 17.4% of the labor force. In 1971 they were 27% of the labor force. More than 40% of rural work force and 25% of total work force works today as wage earners.
3. Casualization of agriculture labor force: The proportion of labor in the agriculture labor force has been constantly rising (from about 25% @ independence to 40% in 1991 and has stayed there since). This becomes even worse if we consider the dropping share of agriculture in GDP.

Agriculture Wage Impact of NREGA (2009 & 2010)

1. AP: 58%.
2. Tamil Nadu: 54%.
3. Odisha: 57%.
4. Bihar: 47%.
5. UP: 72%
6. Punjab: 46%.
7. MP: 72%.
8. Chattisgarh: 72%.
9. Maharashtra: 53%.
10. J&K: 122%.
11. National: 24% (all cumulative).

Agriculture Wage Statistics

1. Long term trend: Studies showed that before 80s, real wages were almost stagnant and in most cases were below minimum wages. Between 1983 and 1993-94 daily real wages grew @ 3.3% p.a. while between 1993-94 to 2004-05 they grew @ 2.3% p.a. only. Between 1999-00 to 2004-05 the rise was 0.6% only. The inequalities between male and female rates has been rising.
2. During the period 2007-10, the average cumulative real farm wage rates increased by 16.0% at the all India level. The growth was the fastest in Andhra Pradesh (42%) and Odisha (33%), Bihar (19%) and Uttar Pradesh (20%).
3. Rural wages in Kerala were the highest in the country in the range of Rs.216-305 during 2008-10, followed by Tamil Nadu, Andhra Pradesh and Karnataka in that order in the Southern Region.
4. In the Northern region, Haryana recorded the highest agricultural wages in the range of Rs.121-182 during 2008-10 period followed by Punjab in the range

of Rs 110-162, and Rajasthan in the range of Rs.105-139. West Bengal and Uttar Pradesh followed in that order.
5. SInce mid 1970s inter regional agriculture wage disparities have been declining. This is because a relative decline in the food grain prices has had a greater impact on the purchasing power of wage earners in lower wage areas. Moreover agriculture labor migration, mechanization of agriculture in high wage areas, alternate poverty and unemployment programmes etc. have had their impact as well.
6. Due to the above factors the disparity between male and female wage rates is also declining. This is because the adoption of farm mechanization technologies in operations traditionally done by women has been low (because their demand was highly seasonal and intense over a few days only).

Land Deterioration

Features

1. Out of 141 mha of cultivable land, 100 mha is degraded. Chemical degradation accounts for 20% and water erosion for 70% of this. 20% of cultivable area is experiencing declining fertility and 2% water logging. 3% of cultivable area is affected by salinity.
2. Severe soil erosion is defined as 40 tonnes pha. Average soil erosion in India is 16 tonnes pha. Thus watershed management and soil conservation projects are needed.
3. Indian soils are carbon deficient due to intensive use like removal of plant residue for forage, removal of crop residue.
4. Global climate changes like rise in sea level, drop in ground water, decrease in soil carbon will lead to additional infertility of soil.

Initiatives

1. Under the RKVY, many state level schemes for soil testings have been launched and information disseminated to peasants.

Water Management

River Basin Linkage Plan

1. It consists of 2 components - (a) Himalayan Component and (b) Peninsular Component. Bulk of water movement will be in peninsular component (80% of 175 bcm water).
2. The Himalayan Component includes mainly movement of water from Ganga basin to western India. Water of Brahmaputra can't be tapped because it is at a lower elevation relative to Ganga basin and Indus can't be touched due to international treaties.

Watershed Management Projects

1. India's utilizable water is 1100 bcm out of 1900 bcm of annual availability. Out of this current demand is 650 bcm and projected demand for 2025 is 800 bcm. Due to competition from other sectors, water availability for agriculture will decrease. India's existing storage capacity is 250 bcm which is ~13% of annual availability. 50 bcm storage projects are under consideration. 220 bcm of groundwater is used for agriculture while 20 bcm for domestic and industrial use.
2. In 2006, Parthasarathy Committee submitted its report in which it said irrigated agriculture appears to be hitting a plateau and dry farming productivity needs to be developed via watershed management projects. Thus the Integrated Watershed Management Programme was modified and stress was laid on micro projects. A target for 25 mha was set in 11th Plan which has largely been achieved.

Dairy Sector

1. India is the largest milk producing nation (120 MT) vs 54 MT in 1990-91 and per capita availability is 275 g/day vs 175 g/day in 1990-91. Demand for milk will be 150 MT by 2017 and 180 MT by 2022. So milk production needs to increase by 6 MT per annum while current growth rate of production is 4 MT per annum.
2. Between 1980-81 to 1989-90, milk production was growing @ 5.6% p.a. while after 1990 it has grown @ 4.2% p.a. only.

Challenges

1. Small herd size and poor productivity. Poor artificial insemination network. Low quality bulls.
2. Neglect compared to crop production, inadequate support facilities like credit, government attention. Encroachment on pasture lands.
3. Poor access to organized markets deprives farmers of proper price.
4. Poor veterinary setup.

Assistance to Cooperatives

1. The central sector scheme started in 1999-2000, aims at revitalizing the sick dairy cooperative unions at the district level and cooperative federations at the State level. The rehabilitation plan is prepared by the National Dairy Development Board (NDDB) in consultation with the concerned State Dairy Federation and District Milk Union. This has succeeded in pulling out many unions from perpetual losses.

National Dairy Plan

1. Phase 1: It focuses nutritional level in fodder, enrichment of straw, availability of loans for dairy farmers, welfare schemes for dairy farmers, support to women co-operative dairy plants and automation. It was launched in Anand and invests $450 mm and covers 14 states. It seeks to increase productivity of milch animals and provide better access of organized milk processing sector to dairy farmers.

Fisheries (Blue Revolution)

1. Indian coastline is 8100 km, EEZ: 2 mm sq. km (west coast: 0.85 mm, east coast: 0.55 mm, A&N islands: 0.6 mm), continental shelf: 0.5 mm sq. km. Fisheries contribute 5% of agri-GDP and 0.6% of total GDP.
2. W Bengal (1.5 MT) > AP (1 MT) > Gujarat and Kerala (0.7 MT each).
3. In 2010, aquaculture production: 5 MT (3rd highest in the world), marine production: 3 MT. Per fisherman catch = 2 T per annum. Fisheries account for ~5% of agriculture produce. Exports are $2.5 bio and growing @ 10% p.a. Growth rate of the sector from 1980-81 to 1989-90 was 4.4% which has slowed down to 3.8% from 1990-91.

Challenges

1. Shortage of quality and healthy fish seeds and other critical inputs.
2. Lack of resource-specific fishing vessels and reliable resource and updated data.
3. Inadequate awareness about nutritional and economic benefits of fish.
4. Inadequate extension staff for fisheries and training for fishers and fisheries personnel.
5. Absence of standardization and branding of fish products.

The Way Forward

1. Schemes of integrated approach for enhancing inland fish production and productivity with forward and backward linkages.
2. Large scale adoption of culture-based capture fisheries and cage culture in reservoirs and larger water bodies are to be taken up.
3. Sustainable exploitation of marine fishery resources especially deep sea resources and enhancement of marine fish production through sea farming, mariculture.

Meat & Poultry

1. Egg production was growing @ 8% between 1980-81 to 1989-90 but has slowed down to 6% since then. Total egg production was 61 bio in 2010-11.
2. Meat production was 5 MT in 2011-12, wool production is stagnant at 42 million kg level since 1990-91.

Challenges

1. Maize availability and cost since it is the largest cost head.

2. Lack of marketing intelligence.
3. Lack of veterinary network.
4. Low skilled manpower and lack of adoption of modern methods.

Measures Taken

1. One time assistance is provided to poultry farms, BPL families are given support to start poultry farms.
2. NABARD is financing a poultry venture capital fund.

Fodder

Challenges

1. A majority of the grazing lands have either been degraded or encroached upon restricting their availability for livestock grazing.
2. Due to increasing pressure on land for growing food grains, oil seeds, and pulses, adequate attention has not been given to the production of fodder crops.
3. Diversified use of agriculture residues like paper industry, packaging, etc. widening the gap between the supply and demand for fodder.
4. Current production of improved fodder seed in the country is about 40 KT as against the requirement of 550 KT to be cultivated on 11 mha area.

The Way Forward

1. A reliable data-base is required for assisting in realistic planning.
2. The forest department can play a major role in augmenting fodder production in the country. The degraded forest areas, mostly under the Joint Forest Management Committees (JFMCs), can be used for assisting growth of indigenous fodder varieties of grasses, legumes.
3. Production of seeds of high yielding fodder varieties needs to be increased. High yielding fodder varieties need to be introduced throughout the country, instead of dual purpose varieties.
4. First and foremost requirement is to enhance area under fodder, which is possible by developing commons. Improving productivity and coverage of coarse grains and dual purpose crops in rainfed areas is the next priority. Since the present availability of seeds of high yielding fodder varieties is severely limited, the next priority is to promote large scale production of high yielding fodder seeds with the help of seed growers and dairy farmers. We also need to do a lot on effective post-harvest management interventions so as to reduce the wastage of crop residues including its enrichment in quality.

Horticulture

1. From 2001-02, the land under cultivation has gone up from 16 mha to 22 mha and productivity from 9 tonnes pha to 11.5 tonnes pha.
2. The National Horticulture Mission follows a cluster approach and provides end to end solutions.

Spices

1. Government has established 2 spice parks in major spice growing regions (MP and Kerala) for post harvest processing vis color sorting, cleaning, packaging, grinding etc.

Debate: Are tenant cultivators as efficient as owner cultivators?
(a) No

1. Investment Argument: A sharecropper tenant would be unlikely to invest in the land because (a) he would have to share the benefits with the landlord. Similarly landlords are also unwilling to invest because the tenant will free ride in this case. (b) his tenancy tenure is not fixed and he may be evicted in the next year itself. Reason (a) can be overcome if there is an agreement on joint sharing of costs as well. But reason (b) remains. And this is made even worse due to Indian laws which favor tenant and hence makes landlord unwilling to sign long term lease agreements. Thus there is an urgent need to reform tenancy laws.
2. Agricultural Technology Argument: In primitive times, the technology wasn't bent in favor of many fixed investments and labor was the key factor. So tenancy survived. Under the new technology, the role of fixed capital is increasing. So this will definitely bend the balance against tenancy.

(b) Yes

1. Pooling Argument: In tenancy lands, the skills and knowledge of both the landlord and the tenant are applied and hence production better. Where cost sharing is agreed to, the capital available is higher - at least working capital for sure and fixed capital to some extent.
2. Agricultural Technology Argument: One way out is equipment being owned by landlord and cost shared or rented to tenant. Another way out is the existence of large rent market for agriculture equipment. This way fixed capital can be paid for like working capital.

Debate: Are small farmers less productive than large farmers?

Table 2: Farm Size, Productivity, Agriculture Growth and Poverty in China and India

Particular	China	India
Average farm size, recent year: ha	0.6	1.21
Productivity/ha Kg 2008		
Paddy	6,556	3,370
Wheat	4,762	2,802
Maize	5,556	2,372
Groundnut	3,102	1,071
Sugar cane	73,114	68,877
Soyabean	1,703	1,042
Average annual agriculture growth rate (%):		
1990-2009	4.1	3.2
2000-09	4.4	2.9
Poverty based on $1 per capita daily income based on PPP 2005 (%):		
1981	84.0	59.8
2005	15.9	41.6

Sources: (1) FAOSTAT. (2) *World Development Indicators 2010*, World Bank. (3) *Selected Indicators of Food and Agricultural Development in the Asia Pacific Region, 1995-2005*, RAP Publication 2006/16, FAO RAP, Bangkok.

1. As we can see China has a lower farm size yet the productivity is double that of India. This is a strong argument in favor of small land holdings. Agriculture growth rate has been higher in China. Coupled with higher productivities they have led to a much sharper decline in poverty indicating that development in agriculture is more effective in reducing poverty.

Table 9: Agricultural Output Per Household, Per Hectare and Per Capita in Different Farm Size Categories

Farm Size Class (ha)	Household Size: Number	Per Capita Land (ha)	Output Value (Rs)		
			Per Household	Per Capita	Per Ha
0.01-0.4	5	0.04	4,783	965	25,173
0.4-1	5	0.12	12,563	2,364	18,921
1.01-2	6	0.24	23,292	3,801	16,780
2.01-4	6	0.43	40,403	6,734	15,091
4.01-10	7	0.82	77,120	10,588	13,564
>10	8	2.20	1,37,473	16,782	7,722
All	6	0.22	18,858	3,143	15,426

Source: *Situation Assessment Survey*, NSSO 59th Round, Report No 497.

1. Productivity per ha: NSSO data conclusively shows that the productivity per hectare decreases with the increase in size of land holding. The productivity per hectare decreases from Rs. 25K for farm sizes < 0.4 hectare, Rs. 19K for farm sizes between 0.4 ha to 1 ha, Rs. 17K for farm sizes between 1 ha to 2 ha to Rs. 8K for farm sizes > 10 ha (Source: NSSO 59th round). The reasons are not too far to seek.
2. Irrigation: Area under irrigation for marginal farmers has gone up from 40% in 1980-81 to 44% in 1990-91 and 51% in 2000-01. For small farmers it was 33% in 1980-81 to 36% in 1990-91 to 39% in 2000-01. For large farmers it was only 16% in 1980-81 to 22% in 1990-91 to 31% in 2000-01. (Source: Agriculture Census)
3. Fertilizer Consumption: Marginal farmers' consumption increased from 55 kgpha in 1981-82 to 99 kgpha in 1991-92 to 175 kgpha in 2001-02. Large farmers however only used 27 kgpha in 1980-81 to 54 kgpha in 1991-92 to 68 kgpha in 2001-02. In unirrigated area, marginal farmers used 24 kgpha in 1981-82, 58 kgpha in 1991-92 and 96 kgpha in 2001-02. Large farmers however only used 9 kgpha in 1981-82 to 19 kgpha in 1991-92 to 22 kgpha in 2001-02.
4. HYV seeds: In 2001-02, 72% of marginal farmers used HYV, 68% of small farmers used HYV while only 47% of large farmers used HYV.
5. Cropping intensity: It was 139 for marginal farmers, 128 for small farmers while only 121 for large farmers in 2001-02.

Table 4: Extent of Area under Irrigation in Different Farm Size Categories (%)

Year	Marginal	Small	Semi-medium	Medium	Large	All Categories
1980-81	40	33	29	24	16	27
1990-91	44	36	33	30	22	33
2000-01	51	39	37	36	31	39

Source: Agricultural Census, 1980-81, 1990-91 and 2000-01.

Table 5: Fertiliser Consumption Per ha of Net Sown Area according to Farm Size Class (kg)

Year	Marginal	Small	Semi-medium	Medium	Large	All Categories
			Total area			
1981-82	55	48	42	36	27	40
1991-92	99	85	77	68	54	76
2001-02	175	129	112	95	68	119
Irrigated area						
1981-82	100	98	99	97	101	99
1991-92	145	140	147	144	157	146
2001-02	252	206	190	174	171	203
Unirrigated area						
1981-82	24	22	18	14	9	16
1991-92	58	48	39	32	19	38
2001-02	96	76	63	46	22	61

Source: Input Survey, Ministry of Agriculture, GOI. Respective issues.

Table 6: Share of Area under HYV in Different Categories of Farms

	Marginal	Small	Semi-Medium	Medium	Large	All size
Irrigated						
1996-97	80	76	76	76	75	77
2001-02	89	86	85	82	78	85
Unirrigated						
1996-97	37	37	38	36	25	35
2001-02	52	54	52	46	30	48
Total						
1996-97	59	55	54	53	42	54
2001-02	72	68	65	61	47	64

Source: Input Survey, Ministry of Agriculture, GOI, respective issues.

Table 7: Cropping Intensity on Farms of Different Size Categories (%)

Year	Marginal	Small	Semi-medium	Medium	Large	All Categories
1981-82	134	128	125	120	116	124
1991-92	137	130	124	121	118	126
2001-02	139	128	126	125	121	128

Source: Input Survey, Ministry of Agriculture, GoI. Respective issues.

Table 10: Estimation of Farm Income Derived from CSO Data at 2004-05 Prices

Particular	Average 2007-08 and 2008-09 Amount (Rs)
1 Gross value of agriculture output/hectare of net sown area	52,191
2 Gross value of inputs other than labour/ha of NSA	14,663
3 Cost of hired labour @	4,251
4 Farm family income /ha 1-2-3	33,277
5 Farm family income/capita assuming five persons/farm household	6,655
6 Poverty line income for rural population:	
Planning Commission	4,276
Tendulkar Committee	5,360
7 Breakeven farm size (ha) to keep above poverty line based on:	
Planning Commission	0.642
Tendulkar Committee	0.805

@ Based on NSSO (2005) ratio of cost of hired labour to costs of inputs is 0.29:1.
Source: *National Accounts Statistics 2010*, CSO, GoI.

1. Capital Intensity Argument: Large farmers are able to employ more capital, hence more productive.
2. Intensive Labor Argument: Small farmers are able to work harder, hence more efficient.
3. Empirical Studies: They indicate productivity is size independent. Factors that impact productivity are easy access to modern inputs, presence of support infrastructure, technology and marketing systems.

Debate: Have intersectoral Terms of Trade improved for agriculture?

1. Inflation data suggests that food inflation has been higher than that of manufactured goods inflation.

2. But this is faulty because it doesn't capture all goods and services consumed by agriculture.
3. Economists argue that income terms of trade are more relevant.

Agricultural Reforms

Q. India urgently needs yet another green revolution by infusing modern technologies like ICT and space technologies and strategic management technologies and strategic management techniques to come up with demand side pressures resulting in persistent food inflation in the economy. Do you agree? (2011, II, 30)

Institutional Reforms

(a) Tenancy Reforms

1. Current tenancy laws impede modernization of agriculture. The number of economically unviable landholdings is increasing. But the marginal farmers have to stick to it and can't lease it out because of pro-tenant legislations.
2. Similarly corporate houses need to get into agriculture, but they can't because of archaic legislations on tenancy.
3. Female empowerment.

(b) Marketing Reforms

1. India's food supply chain is highly ineffective and old. There are a number of intermediaries who add little value and exploit the peasants and consumers. They control the mandis and are opposed to marketing reforms.
2. Peasants get only a fraction of final value. Wastage is 35-40%. MSPs are ineffective in most states due to inadequate capacity of FCI to procure grains as well as corruption in mandis. Storage schemes are being pursued. A PPP scheme will create 15 MT of storage while the budget 2012-13 announced additional storage creation of 2 MT. Additional $1 bio is allocated under Rural Infrastructure Development Fund to storage creation. FCI has a current storage capacity of 64 MT.

(c) Institutional Credit Reforms

1. Agricultural credit needs to be given in the name of the tiller, not the land owner.

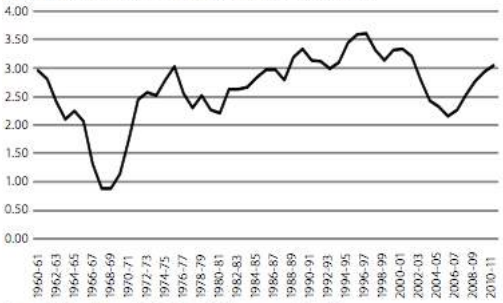
Technological Reforms

1. NAS laid stress on HYV seeds, fertilizers and irrigation.
2. Milk Revolution.
3. Horticulture Revolution.

Green Revolution & Capital Formation in Agriculture

Chand, Parappurathu (2012)

Figure 1: Trend Growth in GDP-Agriculture (at 2004-05 Prices) based on 10-Year Periods (Decade Ending with 1960-61 to 2010-11, %)



Source: National Accounts Statistics, CSO, Government of India.

(a) Trends in Agriculture Growth

1. The above analysis suggests that the decade before the green revolution was characterized by a steep decline in growth in GDP-agriculture, with growth rates plummeting from close to 3% in the decade ending (DE) 1960-61 to less than 1% in the DE 1968-69.
2. The subsequent period witnessed a turnaround in growth with growth rates moving in the range of 2% to 3% for a sustained period of nearly three decades, though with occasional slumps.
3. A deceleration of growth came in the latter half of the 1990s, followed by a quick nutshell, the growth series clearly establishes a steady increase in the growth rate for three decades after the advent of the green revolution, followed by a gradual tapering off and dec- line after the mid-1990s, which lasted for a decade.
4. This was succeeded by an unambiguous turnaround in the years coinciding with the Eleventh Five-Year Plan (2007-12).

(b) Trends in Composition of Agriculture Growth

1. Various phases can be broken down into - (a) Pre-green revolution period (PGR). (b) Early green revolution period (EGR). (c) Period of wider technology dissemination (WTD). (d) Period of diversification (DIV). (e) Post-reform period (PR). (f) Period of recovery (REC)

Table 3: Trend Growth Rates in VOP (2004-05 Prices) of Major Crop Groups during Various Phases of Growth (%/Year)

Crop Group	PGR (1960-61/ 1968-69)	EGR (1968-69/ 1975-76)	WTD (1975-76/ 1988-89)	DIV (1988-89/ 1995-96)	PR (1995-96/ 2004-05)	REC (2004-05/ 2010-11)
Cereals	1.20	1.75	2.63	2.52	0.51	2.60
Pulses	-2.14	-1.02	0.75	0.22	0.23	1.31
Oilseeds	0.76	2.31	2.95	4.42	-1.07	1.43
Drugs and narcotics	2.71	2.51	2.23	2.11	2.89	2.68
Fruits and vegetables	5.14	5.33	3.13	4.07	3.85	5.02
Fibres	0.54	1.79	1.65	5.31	-1.17	7.97
Spices and condiments	1.40	3.10	4.11	3.60	4.95	3.52
All crops	1.11	1.90	2.56	2.64	1.88	3.01

Table 5: Trend Growth Rates in VOP (2004/05 Prices) of Livestock Sub-sectors during Various Phases of Growth (%/Year)

Commodity	PGR (1960-61/ 1968-69)	EGR (1968-69/ 1975-76)	WTD (1975-76/ 1988-89)	DIV (1988-89/ 1995-96)	PR (1995-96/ 2004-05)	REC (2004-05/ 2010-11)
Milk group	1.02	3.53	5.58	4.56	3.72	3.68
Meat group	0.11	0.15	4.37	5.41	3.25	5.05
Egg	4.73	2.15	8.34	5.27	3.81	6.25
Wool and hair	0.39	0.77	-3.32	1.65	2.59	-1.58
Others	-0.83	1.21	1.88	0.18	0.78	2.65
Total livestock	0.40	2.69	4.89	4.12	3.43	4.29

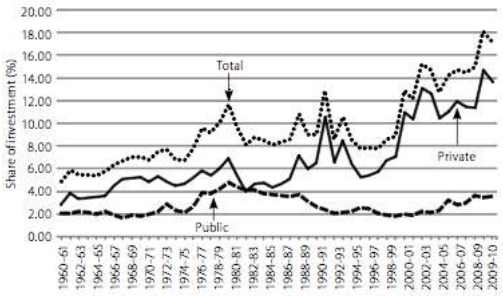
Table 6: State-wise Comparison of Trend Growth (1999-2000 to 2008-09) in NSDP-Agriculture at 2004-05 Prices

Low (up to 2.0)		Medium (< 4 > 2)		High (> 4)	
State	TGR	State	TGR	State	TGR
Jharkhand	-0.9	Uttarakhand	2.2	Madhya Pradesh	4.1
Karnataka	0.4	Himachal Pradesh	2.4	Rajasthan	4.3
Assam	0.8	Punjab	2.4	Maharashtra	4.7
Kerala	1.0	Bihar	2.5	Andhra Pradesh	5.2
Uttar Pradesh	1.6	Jammu and Kashmir	3.4	Chhattisgarh	6.1
Tamil Nadu	1.8	Haryana	3.5	Gujarat	11.5
West Bengal	2.0	Orissa	3.6		

Table 9: Trend Growth Rates in Use of Agricultural Inputs during Various Phases of Growth (%/Year)

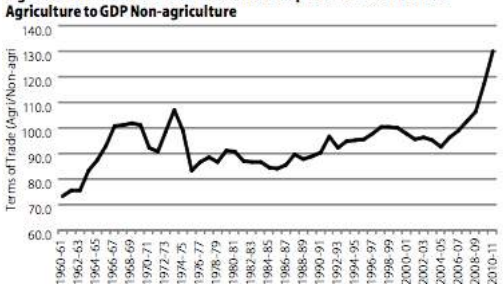
Input	PGR (1960-61/ 1968-69)	EGR (1968-69/ 1975-76)	WTD (1975-76/ 1988-89)	DIV (1988-89/ 1995-96)	PR 1995-96/ 2004-05)	REC (2004-05/ 2009-10)
Quality/certified seeds	NA	NA	NA	3.54	5.56	22.93
Fertilisers (NPK/GCA)	24.22	7.35	9.29	2.84	2.59	6.95
Irrigation (GIA)	2.62	2.77	2.34	2.67	0.75	2.18
All inputs*	2.16	2.62	4.48	2.27	2.07	3.51

Figure 2: Gross Fixed Capital Formation in Agriculture as a Share of GDP-Agriculture at Current Prices (%)



1. Total fixed capital formation in agriculture moved upwards from the mid-1960s onwards when both government and private spending increased with the commencement of the green revolution.
2. In the initial years of this phase, it was private capital formation that received a real impetus. However, public investment picked up in the mid- 1970s.
3. The share of public capital formation in GDP – agriculture remained in the range of 3% to 4% throughout the 1970s, but started dipping from the mid-1980s, falling below 2% in 1996-97 and reaching a trough at 1.87% in 2000-01.
4. As with public investment, private investment also experienced a dip in the early 1990s. Both declined not only in terms of share in GDP but also in absolute terms during this period.
5. This led to a perceptible slowdown in agricultural growth, It also supports the assumption that a part of the deficit in public investment was translated into reduced availability/use of inputs and thereby contributed to a deceleration in output growth.
6. A plough back in investment during the middle of the first decade of this century reversed the consumption pattern of primary inputs, as evident from a substantial growth in certified seed distribution (22.93%), renewed consumption of fertilizers (6.95%) and an increase in area under irrigation (2.18% growth in gross irrigated area).

Figure 3: Terms of Trade Based on Ratio of Implicit Price Index of GDP Agriculture to GDP Non-agriculture



1. Initially India imported food grains from US under PL 480 program. But these grains had strings attached, so India sought food grain self-sufficiency.
2. Earlier agricultural reforms were relied upon to bring change. But their implementation failed and hence New Agricultural Strategy was adopted to increase food grain production. NAS stressed on technological up gradation as compared to agri-reforms. Stress was laid on fertilizers, irrigation, HYV seeds. For better adoption, credit was extended to credit-worthy farmers.

Phase 1: 1966 - 72

1. Before the introduction of new seeds, CACP and FCI were setup. Then 18K tons of new wheat seeds were imported and distributed in irrigated areas of Punjab, haryana and UP. This was supported by provision of fertilizers, power, water and credit @ subsidized rates.
2. The effect was an increase in foodgrain output from 75 MT in 1966-67 to 105 MT in 1971-72 and India became self sufficient in food.
3. GR created a pool of high caste farmers who reaped the benefits and increased their dominance in village affairs as well. Soon they gained political voice and organized themselves to press for their interests (demand more subsidies etc.).

Phase 2: 1973 - 80

1. Initial debacle: Due to hoarding etc. government decided to take over the wholesale trade of wheat which proved to be a disaster. There were successive droughts as well and as a combined effect wheat production actually declined. India had to import food grains again in early 70s.
2. Increasing importance of subsidies: There was the oil shock as well. Government increased fertilizer subsidy so as to prevent a rise in the prices of fertilizers. Retention price scheme in urea was introduced. Non fertilizer subsidy bill too increased from 0.5% of agriculture GDP in 1973 to 4% in 1980. Fertilizer subsidies were 0.4% in 1980. This was 1.5% of total GDP.
3. Increasing investment in ground water irrigation and higher power subsidies: Its share rose from 0.5% in 1960 to 20% in 1975. This was on account of private investment in tube wells. This led to an increase in power subsidies which rose to ~ 45% of total agriculture subsidies in early 1980s.
4. Higher productivity: The production of food grains in the decade increased @ 3.1% p.a. and the yields @ 2.5% p.a.

Regionwise Growth in Agriculture GSDP	1965-80	1980-1990	1990-2005	Overall
All India	2.2%	3.4%	1.7%	2.4%
Northern Region	3.4%	3.5%	1.6%	2.8%
Eastern Region	1.3%	3.6%	1%	1.8%
Central Region	2.1%	3.3%	3.2%	2.7%
Southern Region	1.8%	3.4%	0.5%	1.8%

Phase 3: 1981 - 90

1. Spread and stagnation: It spread eastwards into W Bengal and Bihar which showed an increase in yields of rice @ 5% and 3.7% respectively in 80s. But in the original and other areas the yields stagnated resulting in a yield slowdown in both wheat and rice.
2. Increase in input subsidies: With the slowdown in yields, input subsidies were further increased to maintain the production. From 4.4% of agriculture GDP in 1980s they rose to 7.2% in 1991 and has stayed there since. This was 2% of total GDP in 1990.
3. Adverse impact of government policies: Despite no direct taxes on agriculture and explicit subsidies, the overall environment led to a deterioration in ToT for agriculture. This was due to high indirect taxes, favorable terms and high protection accorded to industry and also anti-export bias towards agriculture.
4. Investment in R&D: Investment in agriculture R&D is only 0.3% of agriculture GDP as against 0.7% in developing countries at large and 2-3% in developed countries. In the initial years of GR, it increased but then stagnated in 1980s and has since fallen.

Phase 4: 1991 - 2005

1. Improving ToT: Lowering of protection for industries led to an improvement in ToT for agriculture from 0.9 in 1991 to 1.2 in 2000 (Gulati and Fan, 2008). This increased the profitability of the sector and also increased investment. But still the policies are mostly inward looking and restrict exports. But between 1999 to 2004 the ToT declined mainly as the Indian prices became more aligned to international prices which were falling.
2. Diversification in consumption: Due to higher incomes.
3. Slowdown in productivity growth: Despite this there was a slowdown in the yield growth in foodgrains from 2.7% in 1980s to 1.4% in 1990s. Stagnation in public investment is believed to be an important factor for this.
4. Rainfed vs irrigated areas: The slowdown of agriculture production growth in rainfed areas was higher than in irrigated areas. For example in Punjab where only 3% of cultivated area is rainfed the agriculture GDP growth fell from 4% in the 1984-85 : 1995-96 period to 2.2% in 1995-96 : 2004-05 period. In Haryana where 17% of cultivated area is rainfed the agriculture GDP growth fell from 4.6% in the 1984-85 : 1995-96 period to 2% in 1995-96 : 2004-05 period. In UP where 32% of cultivated area is rainfed the agriculture GDP growth fell from 2.8% in the 1984-85 : 1995-96 period to 1.9% in 1995-96 : 2004-05 period. But in TN where 50% of cultivated area is rainfed the agriculture GDP growth fell from 5% in the 1984-85 : 1995-96 period to -1.4% in 1995-96 : 2004-05 period. Similarly in Gujarat where 65% of cultivated area is rainfed the agriculture GDP growth fell from 5.1% in the 1984-85 : 1995-96 period to 0.5% in 1995-96 : 2004-05 period. In Rajasthan where 70% of cultivated area is rainfed the agriculture GDP growth fell from 5.5% in the 1984-85 : 1995-96 period to 0.3% in 1995-96 : 2004-05 period. Similarly in Maharashtra where 83% of cultivated area is rainfed the agriculture GDP growth fell from 6.7% in the 1984-85 : 1995-96 period to 0.1% in 1995-96 : 2004-05 period.
5. Small and marginal farmers adopting new inputs at a higher rate than large farmers: Area under irrigation for marginal farmers has gone up from 40% in 1980-81 to 44% in 1990-91 and 51% in 2000-01. For small farmers it was 33% in 1980-81 to 36% in 1990-91 to 39% in 2000-01. For large farmers it was only 16% in 1980-81 to 22% in 1990-91 to 31% in 2000-01. Marginal farmers' consumption increased from 55 kgpha in 1981-82 to 99 kgpha in 1991-92 to 175 kgpha in 2001-02. Large farmers however only used 27 kgpha in 1980-81 to 54 kgpha in 1991-92 to 68 kgpha in 2001-02. In unirrigated area, marginal farmers used 24 kgpha in 1981-82, 58 kgpha in 1991-92 and 96 kgpha in 2001-02. Large farmers however only used 9 kgpha in 1981-82 to 19 kgpha in 1991-92 to 22 kgpha in 2001-02. In 2001-02, 72% of marginal farmers used HYV, 68% of small farmers used HYV while only 47% of large farmers used HYV. In 1996-97, 59% of marginal farmers used HYV, 55% of small farmers used HYV while only 42% of large farmers used HYV. It was 139 for marginal farmers, 128 for small farmers while only 121 for large farmers in 2001-02. The same figure was 134 for marginal, 128 for small and 116 for large in 1981-82.

Impact

1. Need for post harvest management: The new seeds have shorter maturing period. Thus the farmers can do multi cropping. But they also need better storage and post harvest facilities. Multi cropping potential was effectively a land saving one and hence it made the new seeds very popular.
2. Increased inputs: The new seeds convert more nutrients into the grain. Thus they need more fertilizers and hence more water. It was thought that due to high input costs, specially of digging wells in dry areas their use will be restricted by the large farmers and they will increase inequality. But empirical studies show that in 2001-02 in unirrigated land 53% of land small and marginal farmers used HYV seeds while only 30% of land under large farmers used them. The corresponding figures for 1996-97 were 37% and 25% respectively. In irrigated land, 88% of small and marginal land area was under HYV in 2001-02 while 78% of large. The figures were 79% and 77% respectively in 1996-97.
3. Distortion in farm ecology: Since they were heavily dependent on use of fertilizers and water a technologically optimum mix was needed. But economic signals may be distorted and may not reflect the technological optimum. This may degrade the farm ecology.
4. Declining use of manual power and increase in farm mechanization: The uneven agricultural growth is also responsible for it. Areas with high labor surplus saw a larger decline in agriculture output while areas with low labor surplus saw a lower decline in the output. Though labor migration happened but this also increased the farm mechanization. But overall it led to the fall in employment elasticity of agriculture. In many places now new cost sharing models between the tenant and land lord have come up.
5. More equity: The relative decline of food grain prices accrues more benefits to lower segment. It has also led to food security despite lowering employment elasticity of the sector. Moreover the benefits of new technology have accrued more to small and marginal farmers.
6. Environmental degradation and GR: In India more than the harm done by fertilizers and pesticides it is the degradation and deforestation of marginal and common land which causes environmental problem. GR has reduced the pressure on land and empirical studies suggest that deforestation is higher in areas where penetration of new technology is low.
7. Increased commercialization of agriculture. Increased linkages with industry.
8. Degradation of soil, environmental impacts. Free oil / electricity.

Q. "The success of green revolution shows the importance of sate in agrarian transformation." Comment. (2009, II, 20)

Farm Suicides

1. Maharastra, MP and AP account for highest number of farm suicides.
2. Factors increasing suicide likelihood are over dependence on cash crops since their prices are much more volatile and are often rigged at global level. Cash crops also involve higher production costs.
3. One way to reduce the suicides is to increase MSP and making it effective.
4. Government will provide 6 month loans to farmers under ISS for post-harvest storage. Storage schemes are being pursued. A PPP scheme will create 15 MT of storage while the budget 2012-13 announced additional storage creation of 2 MT. Additional $1 bio is allocated under Rural Infrastructure Development Fund to storage creation.

Agriculture Insurance

National Agriculture Insurance Scheme

1. It seeks to provide insurance cover to all crops against natural calamities. Agriculture Insurance Company was the nodal agency.
2. It covers ~25% of the farmers but it is lopsided and ~75% of the operations are in few states only.

Weather Based Crop Insurance Scheme

1. It provided protection against adverse weather incidences. It settled claims in quick time. AIC was the nodal agency.

Rashtriya Krishi Vikas Yojana (RKVY)

1. It is a $4 bio scheme and its objective is to increase investment in agriculture to enhance production and productivity. The poor growth of agriculture over 9th and 10th FYP was seen to be an effect of poor investment in agriculture, hence the need to increase investment.
2. Under the RKVY, many state level schemes for soil testings have been launched and information disseminated to peasants. BGREI, NFSM and National Saffron Mission are a part of it.
3. It incentivizes the states to increase public investment in agriculture. It is a comprehensive scheme and allocations are made to individual projects which are approved if they satisfy various criteria. Up to 25% of the funds can be used to strengthen state agriculture schemes. It seeks to draw synergies between dairy, poultry, fisheries and agriculture.

BGREI

1. This includes block demonstrations of rice and wheat technologies in a cluster mode approach, promoting resource conservation technologies, watershed management activities, increased farm mechanization. The production of rice in 7 states under the scheme has increased by 21% in last 2 years.

National Food Security Mission

1. Focus was on districts where productivity of wheat, rice, pulses, millets and fodder was lower than national average. The aim was to increase production there. National level aim was to increase production of rice by 10 MT (achieved), wheat by 8 MT (13 MT achieved), pulses by 2 MT (3 MT achieved) by 2012. It has been successful.
2. It stressed on increased farm mechanization, better inputs, seed development, technology demonstration and deployment and marketing access. It focused on districts where the productivity was < the state average for rice and wheat. For pulses those districts were covered which have the potential for area expansion and productivity enhancement in pulses.
3. Dedicated Project Management Teams (PMTs) have been provided at district, state and national levels for implementation. Consultants are provided at each level as a part of PMTs. National, state and district level monitoring teams are constituted for continuous evaluation.
4. Publicity campaigns are organized at the national, state and district level through advertisements in print media, video clips on mass media, brochures, fairs, exhibitions, street plays, etc. for popularizing the components of mission.
5. Rice: A majority of districts out of 139 covered showed consistently an increase in yields compared to the pre-NFSM period despite drought conditions. The number of districts recording > 20% increase in the yield were more than those recording < 10% increase in yield.
6. Wheat: A majority of districts out of 141 covered showed consistently an increase in yields compared to the pre-NFSM period despite drought conditions. The number of districts recording > 10% increase in the yield were less than those recording < 10% increase in yield.
7. Pulses: Out of 171 districts a majority consistently showed enhanced yields despite drought conditions.

NFSM Part 2 in 12th FYP

1. It will also cover coarse crops and aim to increase production by 25 MT - 10 MT of rice, 8 MT of wheat, 4 MT of pulses and 3 MT of coarse cereals.
2. In addition to enhancing the productivity in low productivity areas, stabilizing the productivity gains in high producing areas is equally important. Accordingly, in the 12th Plan it will follow location specific, target oriented strategies.
3. It will also promote cropping systems in place of promoting individual crop. Major cropping systems such as rice-wheat, rice-pulses, maize/millets-pulses. Crop rotation, inter-cropping will be promoted.
4. Post harvest management and R&D will receive attention.

Challenges

(a) NFSM

1. Lack of cooperation from states. Better coordination is needed with them.
2. Seed Replacement Rate (SRR) has been targeted without matching the seed production plan in some States. This approach is bound to delay adoption of latest improved varieties.

(b) ISOPOM

1. A large part of area under these crops is rainfed. There is very high fluctuation in the production and productivity of oilseeds due to intermittent dry spells in Kharif season, insect pest infestation and aberrations due to various other factors in some areas and states.
2. The prevalence of local poor yielding varieties requires interventions. Drought, pest and insect tolerant or resistant hybrids and varieties suitable to different agro-climatic zones are required.

The Way forward

1. The future of food security is highly dependent on two important and inter-related factors, first the ability to succeed and absorb the technology for raising agricultural productivity, and second effecting measures to successfully adopt to climate change. There is need for an increased, stable, low cost environmentally sustainable food production.
2. In addition, agriculture needs to be diversified to meet the changing dietary preference and for realizing higher income for the farmers.
3. SRR linked seed production plan should be developed for each state.
4. Approaches should be agro-climatic and region-centric.
5. Programmes should focus on dominant cropping system rather than on a single crop. Rice, wheat and pulses-based cropping systems should be considered. The major cropping systems include: rice-rice, rice-chickpea, rice-wheat, wheat- chickpea and pulses-wheat. Such an approach would pay attention to companion crops of the system rather than focusing on one crop which in any case is dependent on the duration and practices of the other crop.
6. R&D should be encouraged.

National Mission for Sustainable Agriculture

1. It recognizes the threat climate change poses to the food security of the country. So it seeks to transform agriculture into a climate-proof sector. It is a part of National Action Plan on Climate Change.
2. Naturally the focus is on dry farming through the development of drought resistant and pest resistant varieties and developing institutional capabilities. It also includes RADP, CADP.
3. Government report says 1º C rise in temperature will lead to a fall of 6 MT in wheat production.

Rainfed Area Development Program (RADP)

1. RADP has been introduced as a sub-scheme of RKVY during 2011-12 with specific focus on small and marginal farmers by offering a complete package of activities. It follows a cluster approach and seeks to mitigate the impact of weather on agriculture.
2. In budget 2012-13, it will be merged with National MIssion on Sustainable Agriculture.

Command Area Development Program

1. It aims to narrow down the gap between irrigation potential and irrigated area by 10 mm hectares.

National Mission on Micro Irrigation

1. It seeks to encourage use of drip and sprinkler irrigation by providing 60% aid to marginal farmers and 50% to general farmers.

Macro Management of Agriculture

1. It is a scheme to plug the gaps in funding of various projects. Money is given to the states.
2. The practice of allocating funds to States/UTs on a historical basis has been replaced by a new allocation criteria based on gross cropped area and area under small and marginal holdings.
3. The permissible ceiling for new initiatives has been increased from the existing 10% to 20% of the allocation.
4. At least 33% of the funds have to be earmarked for small, marginal and women farmers.
5. Active participation of the Panchayati Raj Institutions (PRIs) of all tiers would have to be ensured in the implementation of the scheme including review, monitoring and evaluation at district and sub-district level.

Agriculture Credit

Increasing Influence of Rural Moneylenders Despite Rising Formal Agri-Credit

1. Moneylenders provided 70% of total rural credit in 1951. This proportion fell to 17% in 1981 before climbing back to 30% in 2002.
2. Farmers often choose to go to moneylenders despite higher interest rates because of more flexible repayment schedules, strict KYC norms of banks, provision of agri-credit against the title or tenancy agreement only and fewer restrictions on borrowing for consumption.
3. The collapse of microfinance seems to have provided another catalyst for the re-emergence of the moneylender.

Aggregate Agricultural Credit Numbers

1. The government has followed Doubling of Agriculture Credit Policy (DACP) where agriculture credit has to be doubled every 3 years starting from 2003-04.
2. So far in all years, targets have been overachieved with the agriculture credit growing from $17 bio in 2003-04 to $95 bio in 2011-12. Target for 2012-13 is $115 bio. But a breakup of these numbers provides a different story.

Issues with Indian Agricultural Credit Setup

Institutional Breakup

1. Historically cooperatives and Regional Rural Banks (RRB) have been more suited to the needs of small and marginal farmers.
2. In 1991-92, cooperatives controlled 51% of agri-credit flow, scheduled commercial banks 43% and RRBs 5%. in 2010-11, share of cooperatives dropped to 16%, scheduled commercial banks to 74% and the RRBs to 10%.

Regional Imbalance

1. South India accounts for just 18.5% of Gross Cropped Area (GCA) but takes 37.5% of the agri-credit. Central India on the other hands accounts for 27% of the GCA while agri-credit is just 13%. This was the situation in 11th 5-year Plan and the situation has worsened from the 10th 5-year Plan.

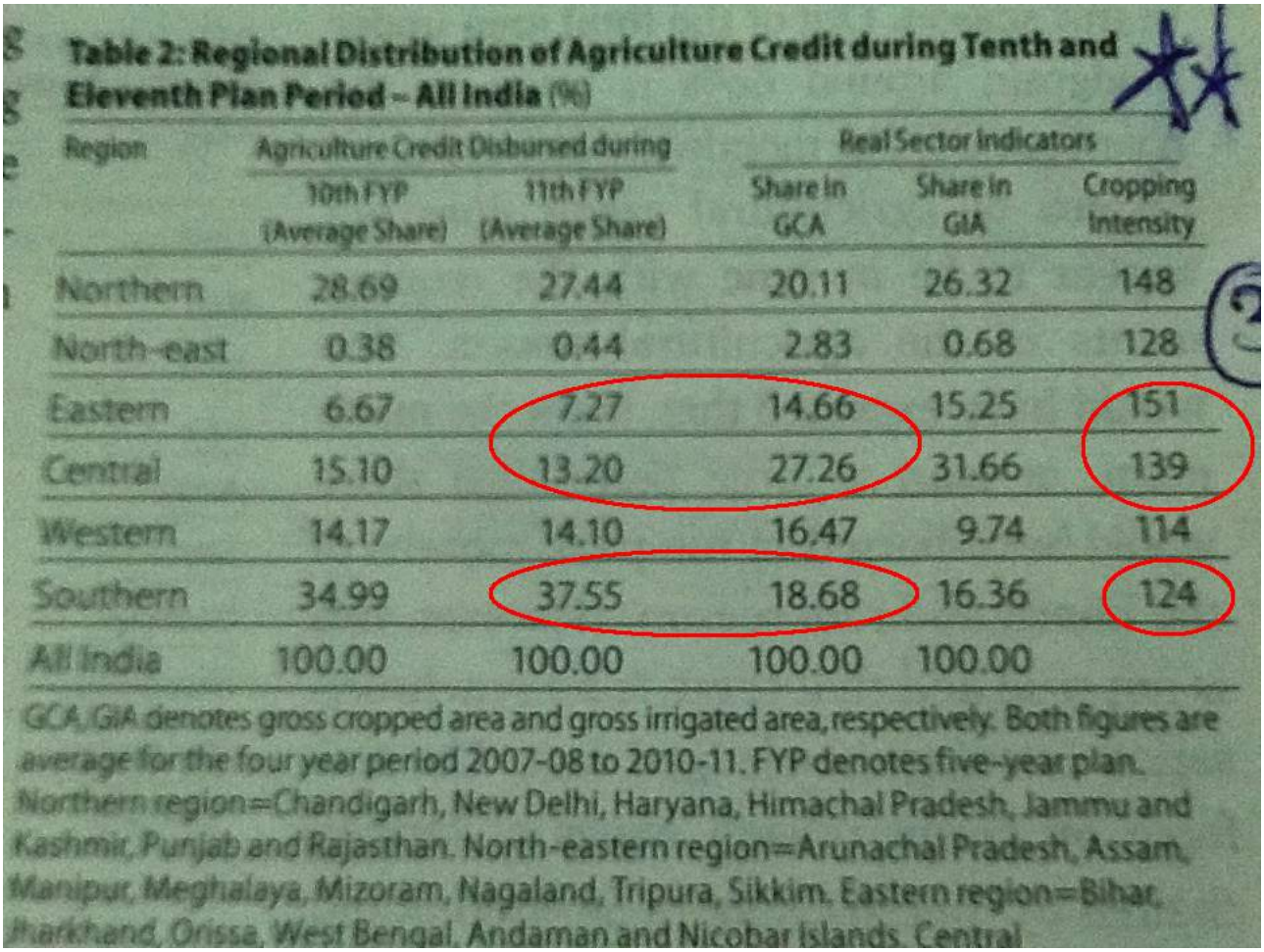


Table 2: Regional Distribution of Agriculture Credit during Tenth and Eleventh Plan Period – All India (%)

Region	Agriculture Credit Disbursed during		Real Sector Indicators		
	10th FYP (Average Share)	11th FYP (Average Share)	Share in GCA	Share in GIA	Cropping Intensity
Northern	28.69	27.44	20.11	26.32	148
North-east	0.38	0.44	2.83	0.68	128
Eastern	6.67	7.27	14.66	15.25	151
Central	15.10	13.20	27.26	31.66	139
Western	14.17	14.10	16.47	9.74	114
Southern	34.99	37.55	18.68	16.36	124
All India	100.00	100.00	100.00	100.00	

GCA, GIA denotes gross cropped area and gross irrigated area, respectively. Both figures are average for the four year period 2007-08 to 2010-11. FYP denotes five-year plan. Northern region=Chandigarh, New Delhi, Haryana, Himachal Pradesh, Jammu and Kashmir, Punjab and Rajasthan. North-eastern region=Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, Sikkim. Eastern region=Bihar, Jharkhand, Orissa, West Bengal. Andaman and Nicobar Islands. Central

Mistargeting

1. Cropping Intensity is the ratio of GCA to NCA. Typically small and marginal farmers are more intensive users of land compared to the rich farmers. Again we see regions of high cropping intensity have lower allocation of agri-credit available.
2. Cropping holiday in AP is a tell tale sign of agriculture credit gone wrong. It is given to absentee farmers who use it for non-agricultural purposes.
3. 67% of agricultural workforce is women but they don't have titles to land, hence can't avail of agriculture credit.

Government Initiatives

1. Interest Subvention Scheme (ISS) which gives crop loans to farmers up to Rs. 1 lac and 1 year at 7% p.a. + a waiver of further 3% on the farmers with prompt repayment history.
2. Post harvest loans for up to 6 months will be given to farmers under the same ISS. This is to avoid distress sale. (But where will they get storage facility from?)
3. ADWDRS, 2008 to free up bank lines to the sector.
4. For loans up to Rs.50,000 no need of the No Dues Certificate.
5. For loans up to Rs. 1 lac no need of any security.
6. Kisan Credit Cards: This helps in providing timely credit. It is like a revolving facility, all paper work done in beginning and the farmer assigned a credit limit. Banks are now enhancing this card to a chip based card which will be like ATM and hold limit and usage information.

Agriculture Debt Waiver and Debt Relief Scheme, 2008

1. All loans made between 1 April 1997 and 31 March 2007 and due on 31 December 2007 and unpaid on 28 February 2008 were eligible for the scheme.
2. So far the Government has spent Rs. 52k cr on it.

Y H Malegam Committee on Micro finance Institutions
This committee was constituted by RBI in wake of the MFI developments in AP. Its main recommendations are:

1. MFIs to be designated as separate NBFC to be brought under RBI control.
2. A margin cap of 10% for established MFIs and 12% for small MFIs.
3. A cap of 24% on the interest chargeable.
4. A borrower can be a member of only one SHG.
5. MFIs can only charge 3 fees for increasing transparency - interest, insurance fee, processing fee.

PDS (after 1991)

Procurement of food grains increased from 343 lakh metric tonne (LMT) to 634 LMT during the period 2006-07 to 2011-12. As a result, stock of food grains in the Central Pool also went up from 259 LMT on 1 June 2007 to 824 LMT on 1 June 2012. Such a

What did our performance audit reveal?

The average food grains procurement of 514 LMT during the period 2006-07 to 2011-12 was lower than the average allocation of 593 LMT made by the Government of India (GOI) to states for distribution under Targeted Public Distribution System (TPDS) and Other Welfare Schemes (OWS). The current procurement level of food grains by FCI, State Government Agencies (SGAs) and states undertaking decentralized procurement (DCP) would not be able to adequately meet the allocation and the future requirement of food grains estimated by the GOI.

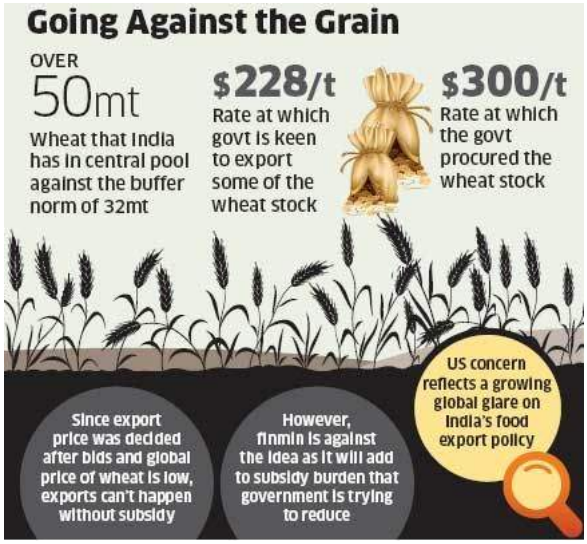
TPDS, OWS) within the minimum buffer stock. The existing norms also did not specify the maximum and manageable level of stock to be maintained in the Central Pool and the components therein.

Under the existing buffer stock policy, the total stock of food grains held by FCI, State Governments and their agencies constitute the Central Pool. The policy does not indicate the agency which is primarily responsible for maintaining minimum buffer stock level for the country as a whole. There are many agencies involved in storing food grains of the Central Pool which adversely affects accountability and transparency in the management of food grains.

different State Governments. There were also wide inter-state variations both in statutory and non-statutory charges being charged by the State Governments. All this resulted in the rising of the acquisition cost of food grains.

Trends

1. Procurement: Procurement operations of government were < 5% of agriculture output before the GR. In 80s they rose to 10% and now they have risen to over 15%. This has reduced the fluctuations in average per capita availability of food grains and also interstate variations.
2. Role of MSP: Higher MSPs for wheat and rice have led to benefits of procurement accruing largely to large farmers in the surplus states for these crops. But due to lack of FCI operations in crops other than wheat and rice and in states other than Punjab, Haryana and UP, MSPs have proved to be largely illusionary. MSP of wheat and rice has generally been higher than the cost of production while that of pulses has been lower.
3. Differential pricing: Before 1997 PDS was universal and followed a uniform pricing model. But then it was switched to TPDS and BPL families were given stock @ ~ 67% of APL. Antodaya Anna Yojana families were given ~ 50% of BPL prices. Between 1997 to 2002, APL prices were quite close to market prices. Hence APL offtake declined and many FPS became unviable. Now nearly 60% of supply goes to BPL and 20% to Antodaya.
4. Food stocks: Due to lower APL offtake surplus food stocks accrued (reaching 60 MT against 20 MT norm of buffer stocks) till 2002. This increased cost of carrying as well as food subsidy. Then prices for BPL were reduced further and their ration increased and also exports permitted so that food stocks declined again to below 20 MT level. Currently stocks are 80 MT.
5. Interstate variations: PDS offtake as a proportion of people living below poverty line is less in poorer states is compared to the richer states indicating poor functioning of PDS in these states. The 4 southern states with lower incidence of poverty continue to lift around half of the PDS offtake.



Evaluation

1. Regularity and predictability in opening hours of the FPS helps in prevention of diversion of quotas.
2. Reduction and rounding off of prices has helped reduced overcharging.
3. The FPS has a higher density than post offices and banks.
4. PDS is working better in Southern states while in Bihar it is dysfunctional.
5. Social monitoring of the FPS can improve the system. Also paying higher commissions to the dealer can help in reducing corruption.

6. FCI costs can be reduced by making its operations decentralized i.e. procurement and disbursement locally.

Government Initiatives
Targeted PDS (TPDS)

1. Special cards are issued to BPL families. This scheme has been reasonably successful.
2. State governments lift food from FCI in this scheme and the food is sanctioned each month and lifting period is 50 days.

Antodaya Anna Yojna

1. It is targeted to poorest section of BPL families it sanctions a release of rice at Rs. 3 per kg and wheat at Rs. 2 per kg.

PDS Reforms

1. Some states like Chattisgarh are parking the PDS services on the smart cards like RSBY run by the central government i.e. these smart cards would double up as ration cards. These cards will have all the entitlements and record the disbursement for a household. This card would be swiped and also used with thumb impression of the user on the biometric machine. This will ensure weeding away of ghost beneficiaries. The information flow will happen directly with a central server. This also means that the person can get his ration from any authorized shop including the private shops. Odisha is also moving towards smart cards.

National Food Security Ordinance, 2013
Features

Analysis

1. Anti-farmer & serious compromise on food security
    1. Criticism: If 68% people buy wheat at such a low rate, how will the farmers get their remunerative price? They will start cultivating some other crop. This could lead to a serious food security issue in the nation.
    2. Truth: But if the Bill indeed leads to a larger procurement it will compel the government to raise the MSP for grain. This will benefit the farmers. Higher prices will encourage the farmers to cultivate more wheat.
2. Nationalization of grain trade
    1. Criticism: It will increase government procurement which will drive out private players. Thus it will lead to nationalizing the grain trade.
    2. Truth: Even without the Bill, the government is already buying about 70 million tonnes plus of grains. FSB requires only about 50 MT of grains. So it can't be blamed for any additional procurement.
3. Fiscal deficit
    1. Criticism: It will increase food subsidy and hence higher deficit.
    2. Truth: FSB doesn't lead to any higher procurement. On the contrary, it will increase the off take and would actually reduce the subsidy (sales realization + reduced carrying costs).
4. Issue of federalism
    1. Criticism: PDS is operated by states but the new bill proposes that the Grievance Redressal Officer be under Central control. This encroaches upon the federal character of the Union.
5. Last mile connectivity issue
    1. Criticism: The last mile connectivity has been left to "local authorities". But local authorities mean bureaucracy and the use of the term is a colonial legacy. Instead it should have been entrusted with local self governments.

Salient features of NFSB

The salient points of the ordinance are:

Up to 75 percent of the rural population and up to 50 percent of the urban population will have uniform entitlement of five kg food grain per month, at highly subsidised prices of Rs.3, Rs.2, Re.1 per kg for rice, wheat and coarse grains, respectively.

The poorest of poor households would continue to receive 35 kg food grain per household per month under the Antyodaya Anna Yojna at subsidised prices of Rs.3, Rs.2 and Re.1.

State-wise coverage will be determined by the central government.

The work of identification of eligible households has been left to the states/Union Territories, which may frame their own criteria or use Social Economic and Caste Census data, if they so desire.

There is a special focus on nutritional support to women and children. Pregnant women and lactating mothers, besides being entitled to nutritious meals as per the prescribed nutritional norms, will also receive maternity benefit of at least Rs.6,000 for six months. Children in the age group of six months to 14 years will be entitled to take home ration or hot cooked food, as per prescribed nutritional norms.

The central government will provide funds to states/UTs, in case of short supply of food grain from central pool.

In case of non-supply of food grain or meals to entitled persons, the concerned state/UT governments will be required to provide such food security allowance to the beneficiaries as may be prescribed by the central government.

The central government will provide assistance to the states towards cost of intra-state transportation, handling of food grain and fair price shop (FPS) dealers' margin, for which norms will be developed.

The ordinance also contains provisions for reforms in the Public Distribution System (PDS) through doorstep delivery of food grain, application of information and communication technology (ICT) including end-to-end computerisation, leveraging 'Aadhaar' for unique identification of beneficiaries, diversification of commodities under the Targeted PDS (TPDS) for effective implementation of the ordinance.

The eldest woman in the household, of 18 years of age or above, will be the head of the household for the issue of the ration card. If the eldest woman is not available, the eldest male member is to be the head of the household.

There will be state and district level redressal mechanism with designated officers. The states will be allowed to use the existing machinery for District Grievance Redressal Officer (DGRO), State Food Commission, if they so desire, to save expenditure on establishment of new redressal set-up. Redressal mechanism may also include call centres, helpline etc.

Provisions have also been made for disclosure of records relating to PDS, social audits and setting up of Vigilance Committees in order to ensure transparency and accountability.

The Bill provides for penalty to be imposed on public servants or authority, if found guilty of failing to comply with the relief recommended by the District Grievance Redressal Officer (DGRO).

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Are we prepared for NFSB

Of these, the most important challenge is to decide the interstate allocation of foodgrain for the Public Distribution System (PDS). At present, this allocation is arbitrary and is neither based on population nor poverty. Thus, poorer states like Uttar Pradesh (UP) and Bihar get much less food allotment than their share in poverty, whereas, it is just the opposite for the Southern states. This is why Tamil Nadu is opposing the Bill.

Secondly, actual distribution cannot begin unless the eligible households are identified. The final results of the Socio-Economic and Caste Census will not be available for all the states, especially the larger states like UP, Bihar and Tamil Nadu, until the beginning of 2014. Further, there has been a lot of secrecy in conducting the survey, and people even in states like Haryana, where the lists on paper have been shared with the people and finalised, no one knows whether he/she is in or out. There could be a great deal of disenchantment and anger when the actual distribution of grain begins.

The Bill encourages states to reform the PDS, including doorstep delivery of foodgrain, end-to-end computerisation; and leveraging "Aadhaar" (UID) for unique identification of entitled beneficiaries. The progress is extremely slow, though not in all states.

Lastly, the Central government should discourage the distribution of manufactured "ready-to-eat" food under the Integrated Child Development Scheme (ICDS) since it leads to grand corruption at the ministerial level. Unfortunately, the government has encouraged such tendering by laying down the minimum nutritional norms for take-home rations, including micronutrient fortification, thus providing a dangerous foothold for food manufacturers and contractors, who are constantly trying to invade child nutrition programmes for profit-making purposes.

Food Processing (after 1991)

Trends

1. Issues: FPI has been plagued by factors such as low public investment, poor infrastructure, inadequate credit availability and high levels of fragmentation.
2. Higher growth: The Indian food processing sector's higher rate of growth as compared to the agriculture growth rate is indicative of its low base, changing life styles, tastes and higher disposable income with consumers.
3. Requirements: The sector needs huge investments in logistics. It is largely a private sector activity but government should provide needed incentives for faster investments.
4. Current policy framework: Most food processing enterprises have been exempted from industrial licensing with the exception of beer and alcoholic drinks and items reserved for the small scale sector. For foreign investment and technology, automatic approval is given even up to 100% for a majority of processed foods. The policy initiatives also include sale of 50 percent in the domestic tariff area of agro-based 100 percent EOUs, zero duty EPCG Scheme; declaration of the industry as a candidate for priority lending by banks; interest subvention scheme @ 4% interest and opening up of mega food parks.
5. Economic stats: Since 2004-05 while agriculture growth has been 3.3%, food processing industry has grown @ 9.3%. However the growth in meat, fruits, vegetables etc. is only 7.3% and in dairy products is only 6.7%. As a result the FPI output now (2009-10) forms 12% of agriculture output as against 9% in 2004-05. Inbound FDI (from 2000-2011) has been only $2.5 bio which amounts to < 2% of total inbound FDI. The industry employed 1.5 mm people in 2007-08.

Scheme for Cold Chain, Value Addition and Preservation Infrastructure

1. The Scheme was approved in 2008 with an objective to provide integrated and complete cold chain series without any break for perishables from the farm gate to the consumer with a capacity of 10 MT.
2. The assistance under the Scheme includes financial assistance of 50% subject to a maximum of Rs 10 crore. But so far the approved projects envisage creating a cold chain capacity of only 0.16 MT.

Mega Food Parks Scheme (MFPS)

1. It provides for a capital grant of 50% of the project cost with a ceiling of Rs 50 crore to establish food processing parks. The grant shall be utilized towards creation of common infrastructure in the park. Such facilities are expected to complement the processing activities of the units proposed to be set up at the CPC in the Park.
2. Out of 30 Mega Food Parks proposed during the eleventh five year plan, the Ministry has taken up 15 projects under the Scheme so far.

Scheme for Technology Upgradation, Establishment, Modernization of Food Processing Industries

1. It gives financial assistance for the setting up of new food processing units as well as technological upgradation and expansion of existing units in the country @ 25% of the cost of plant & machinery subject to a maximum of Rs. 50 lakhs.
2. Earlier all the applications for such grants were received by the Ministry through the State Nodal Agencies. These applications were then centrally processed and grants disbursed directly by the Ministry. From 2007-08, the receipt of applications, their appraisal, calculation of grant eligibility as well as disbursement of funds has been completely decentralized. Under the new procedure, an entrepreneur or applicant can file an application with the neighborhood Bank branch or Financial Intuition (FI). The Bank or FIs would then appraise the application and calculate the eligible grant amount as per the detailed guideline given to them by the Ministry. The Banks and FIs appraise the project and its recommendation for the release of grant is transmitted to the Ministry through an e-portal established for this purpose. After the recommendation and requisite documents are received from the Bank or FIs, the Ministry sanctions the grant and transfers the funds through the e-portal itself.

The Way Forward

1. Pricing policies also need to be changed, as linking these with the quality of the produce or a product is the basis for fixing per unit price, just as fat content in milk; higher protein quality/ quantity in wheat; better aroma or cooking quality in rice and shelf life of fruits and vegetables.
2. Policy and legislation should be reformed to allow processors to purchase their produce requirement directly from the farmers. Intermediaries in the food chain lock value and add to the cost of the raw materials.
3. Self-help or common interest groups, producer companies on the model of cooperatives should be encouraged to enhance the bargaining power of the farmers and negotiate effectively with the industry.
4. The Town and Village Enterprises (TVEs) model of China is an excellent example for involving surplus rural labor in industrial activity by providing them alternative work at their doorstep. Location of food-processing units should be strategically placed depending upon the raw material availability, labor, product utilization and domestic and/or export marketing.
5. The processing of agricultural raw material generates a sizable amount of utilizable byproducts, commonly termed as 'waste'. Experimental protocols for converting these into usable secondary or co-products are available. These need to be developed into commercially viable technologies.

National Mission on Food Processing (NMFP)

It will include

1. Scheme for technology up-gradation / establishment / modernisation of food processing industries.
2. Scheme for cold chain, value addition and preservation infrastructure.
3. Setting up/ modernization/ expansion of slaughter houses.
4. Scheme for Human Resource Development.
5. Scheme for promotional activities.
6. Creating primary processing centres / collection centres in rural areas.
7. Modernization of meat shops.

It will add to the decentralization of the government schemes as states will have a substantial role in it.

Objectives :

i. To promote facilities for post-harvest operations including setting up of food processing industries.
ii. To undertake decentralization of the schemes so far operated by the Ministry of Food Processing Industries (MoFPI) in order to take into account the requirements suitable to the local needs.
iii. To augment the capacity of food processors working to upscale their operations through capital infusion, technology transfer, skill Upgradation and handholding support.
iv. To support established self-help groups working in food processing sector to facilitate them to achieve SME status.
v. Capacity development and skill upgradation through institutional training to ensure sustainable employment opportunities to the people and also to reduce the gap in requirement and availability of skilled manpower in food processing sector.
vi. To raise the standards of food safety and hygiene in order to meet the norms set up by FSSAI.
vii. To facilitate food processing industries to adopt HACCP and ISO certification norms.
viii. To augment farm gate infrastructure, supply chain logistics, storage and processing capacity.
ix. To provide better support system to organized food processing sector.

3.1 The Mission will be governed by the National Food Processing Development Council (NFPDC) headed by the Hon'ble Minister of Food Processing Industries as its Chairman

Council will be the policy making body giving overall direction and guidance to the National Mission on Food Processing (NMFP), and will monitor and review its progress and performance. The NFPDC will meet at least twice a year.

3.2 To administer the Mission, an Executive Committee (EC) headed by Secretary, M

State Level Empowered Committee (SLEC)

4.1.1To carry out administration of the State Food Processing Mission, a State level

Empowered Committee (SLEC) will be constituted by the State Government under the Chairmanship of the Chief Secretary having representatives from other concerned Departments, a

5. Funding Pattern of NMFP: This scheme will be implemented as a new centrally sponsored scheme in all the States in the ratio of 75:25 (Govt. of India and States) except for North Eastern Sta

(i) Scheme for Technology Up-gradation/ Establishment/ Modernisation of Food Processing Industries.

(ii) Scheme for Cold Chain, Value addition and Preservation Infrastructure for Non Horticultural Products.
(iii) Scheme for Modernisation of Abattoirs.
(iv) Scheme for Human Resource Development (HRD) with the components of (a) Creation of Infrastructure Facilities for running Degree/ Diploma/ Certificate Courses inFood Processing Technology; (b) Entrepreneurship Development Program (EDP) and (c)Food Processing Training Centre (FPTC).
(v) Scheme for Promotional Activities for (a) Organising Seminar/ Workshops; (b) Conducting Studies/ surveys; (c) Support to Exhibitions / Fairs and (d) Advertisement and Publicity.
(vi) Scheme for Creating Primary Processing Centers / Collection Centers in rural areas.
(vii) Modernisation of Meat shops.
(viii) Reefer Vehicles.
(ix) Old Food Parks.

Agricultural Prices and Marketing

Horticulture Trains

1. They exclusively carry horticulture products. Presently, one such train runs from Maharashtra to Delhi, largely carrying bananas. The idea was to connect major fruit and vegetable-producing centres with the consuming ones. They have special refrigerated containers to exclusively move perishable items.
2. But, there have been operational difficulties like mid-point loading and unloading in such trains, which is not possible currently as the trains run non-stop.
3. Full-fledged trains just carrying perishable items are not cost effective as all wagons need to be full to make the journey profitable. Refrigeration needs additional power which drives up the costs. So the idea of putting a few refrigerated containers in normal goods train is being proposed.
4. Ripening rooms and pre-cooling chambers need to be installed in the destination and origin point of the trains.

Sugar Industry Decontrol

1. Freedom to mills from supplying subsidized sugar for state-run welfare programmes.
2. Quota system is also abolished which gave government the authority to decide the amount of sugar that was released in the market.
3. The sugar mills must share 70% of the value of sugar and each by-product as cane dues payable to the farmers.
4. Export and Import policy should not be guided by domestic availability.

Issues in Food Pricing Policy

1. Issues with CACP's way of setting MSP
    1. Distortion of cropping pattern: MSP has been set hugely above cost of production for rice and wheat. This has distorted the cropping pattern and huge surpluses are produced and procured in these two crops only.
    2. Distortion of entire market: Other issue is once the purchase price is set above the market clearing price, then you have to set the selling price at a lower level than the market clearing price.
2. How to correct the distortions
    1. Since the MSPs are already fairly high, urea prices should be decontrolled or at least raised. This will also correct the distortion in the fertilizers market.
    2. If the stocks of grain are higher than a certain amount, government should clear it by subsidized domestic sales.
3. Issues with subsidized domestic sales
    1. There could be a tendency to purchase the grain at lower price and thereafter export at a higher rate.
    2. But that is a matter for the commerce ministry to look at, not the food ministry. That is a matter about trade, not pricing of grains. Correct way of doing that will be through an export tax.

Why has cropping pattern not responded to inflation in proteins?

1. Pulses are fundamentally different from cereals and require different set of techniques altogether. They require more irrigation, more fertilizers etc. As such they are more vulnerable to vagaries of climate and hence riskier.
2. While the price support in cereals has been backed by procurement operations by the government, pulses see no such large scale procurement. Hence government MSPs remain ineffective.
3. As a result of above to factors farmers continue to grow them on marginal lands only and refrain from investing in high yielding (but expensive) varieties and techniques. So the yields have remained stagnant from 590 kgpha in 90s to 600 kgpha in 2000s and 700 kgpha in 2011-12. Rainfed area accounts for 56% of total cropped area, 48% of the area under food crops but 77% of area under pulses and 66% of area under oilseeds.
4. Post harvest waste in pulses as well as fruits and vegetables remains high. Food processing industry covers only 2-3% of fruit and vegetable production in India (as against 30% in Thailand and 70% in Brazil). So farmers are reluctant to follow price signals. Similarly in milk we need an amul in every state as currently except for a few states other states are lacking in organized milk processing.

What needs to be done?

1. We need large scale investments in food processing and storage.
2. We need to assure minimum returns + upside to the farmers.
3. We need to enlarge government procurement operations in these items.
4. We need to allow private corporates in these items so as to break the current monopoly of private traders.
5. We need to develop short time growing varieties of pulses so that it reduces risks considerably.
6. We need to sign long term procurement agreements with other nations on pulses. Imports in pulses can be financed by exports of cereals.
7. Rain-fed farming has lost out on focus. But ICAR is currently spending barely 13% of its total research expenditure on rain-fed farming .

Drivers of Agriculture Prices

1. Contribution of different commodities: In last 2 years, Fruits, eggs, fish, meat and milk have contributed more than 40% of the food inflation. Vegetables became an important contributor during December 2010 - March 2011 and then again between August - October 2011. Certain other commodities like sugar, edible oils, spices have from time to time played an important role in the overall food inflation and thus commodity specific factors also have a role to play. Prices in India are mainly affected by domestic factors and distortions and international prices affect only in a limited and indirect way.
2. Market distortions: Market distortions both in retail and wholesale markets. Moreover the prices don't reflect retail prices paid since retail prices differ from wholesale markets. Moreover, supply responses to demand hikes are usually affected with a time lag.
3. Storage capacity: India has a total storage capacity of 110 MT out of which public sector capacity is 75 MT, cooperative sector capacity is 15 MT and private sector capacity is 20 MT. Only five states MP, AP, Punjab, Maharashtra, and Haryana have more than 60% of the total storage capacity. Reasons for low private sector response include lack of credit, long gestation period, lack of front end marketing capabilities. PPP in infrastructure development is being promoted through viability gap funding.
4. Changing per capita consumption trends: Between 1993-94 and 2009-10, cereal consumption in rural areas fell by 16% and by 11% in urban areas. Consumption of fruits and vegetables rose by 49% in rural areas and 42% in urban areas in the same period. Consumption of milk rose by 5% in rural areas and 10% in urban areas over the same period (between 2004-05 and 2009-10 milk consumption rose by 6% in rural areas and 5% in urban areas). In rural areas, share of cereals in total food consumption has declined from 38% in 1993-94 to 29% in 2009-10 and in urban areas from 26% in 1993-94 to 22% in 2009-10. Pulses has remained largely unchanged between 6-7%. Milk has increased from 15% to 16% in rural areas and from 18% to 19% in urban areas. Edible oil has declined by about 1%/ Egg, fish and meat has gone up by ~ 1% from 5% to 6%. Share of vegetables has risen by 2% from 9% to 11%.
5. Changing copping pattern: Between 2004-05 and 2009-10, cereals production has grown @ 3.4% p.a., pulses production @ 3.5% p.a. while oilseeds @ 4.2% p.a. While demand for cereals is increasing at a negligible rate demand for other 2 is increasing at a faster pace. Between 2006-07 and 2010-11, area under arhar increased by around 24% and its production by 25% (indicating flat yield). In oilseeds however there has been a major increase in productivity. In case of groundnut while the area increased by about 6%, the increase in production amounted to 55%. Similarly, in case of soybean the increase in area by 15% resulted in a production increase by 43%. The 12th FYP assumes a 4% agriculture growth with food grains growth @ 2% and non food grains @ 6%.
6. Per capita availability: The per capita availability of some of the items such as cereals and pulses have been declining resulting in some pressure on their prices. In the case of fruits and vegetables, milk, egg, meat and fish, prices have gone up despite an increase in per capita availability. This is due to a changing pattern in the demand of the households for high value items with increasing income levels. Per capita availability of food grains from has come down from 510 grams per day in 1991 to 444 grams per day in 2009.
7. Rise in MSPs: In 2011-12, paddy MSP has been raised by 17% to Rs. 1250, pulses by 33%, cotton by 10%, oilseeds between 17 - 35% and wheat by 15%. But MSPs are largely ineffective in most states and for most crops (except rice and wheat).
8. Rise in fuel prices: Fuel inflation has ranged around 15% levels in past 2 years which has a feed through effect in agriculture.
9. Rise in GDP and public expenditure targeted towards poor (high income elasticity for food among poor).
10. G-20 Initiatives: G-20 Agriculture Minister's meet in 2011 accepted a declaration on action plan on food price volatility. It has been decided to focus generally on the following areas: (i)Agricultural production and productivity; (ii) Market information and transparency; (iii) International policy coordination; (iv) Reducing the effects of price volatility for the most vulnerable; and (v) Financial regulation of agricultural financial markets. The concrete steps outlined

to achieve these goals are as follows: (i)International Research Initiative for Wheat Improvement (IRIWI) (ii)Agricultural Market Information System (AMIS); (iii) The Global Agricultural Geo-Monitoring Initiative; (iv)Rapid Response Forum; (v)Agriculture and Food Security Risk Management Toolbox; and (vi)Emergency Humanitarian Food Reserves.

Previous Years

1. 2006-07: General inflation: 7%. Overall food inflation 13%.
2. 2007-08: General inflation: 8%. Overall food inflation 6%.
3. 2008-09: General inflation: 2%. Overall food inflation 8%.
4. 2009-10: General inflation: 10%. Overall food inflation 21%.

2010-11

1. General inflation: 10%. Overall food inflation was 10%.
2. Cereals: Was lower than general inflation and fell from 8% in APril 2010 to 3% in December 2010 and 5% in April 2011.
3. Pulses: Was high @ 25% in April 2010 but fell through the year to reach -10% in December 2010 and stayed @ -5% in April 2011.
4. Horticulture products: Fruit inflation remained out of control @ 20% through the year with occasional spikes to 30-40% range. Vegetables remained sustained @ sub 10 levels except for a very high spike in December - January period.
5. Milk: It remained high in 15 - 25% range throughout the year.
6. Eggs, meat, fish: It remained in a very high zone of 20 - 40% throughout the year with reaching 10% level only towards April 2011.

2011-12

1. General inflation: In the 10-11% range. Overall food inflation: 10%.
2. Cereals: Substantially lower than food inflation @ 5%.
3. Pulses: Started the year around -5% but quickly rose to 10% by September 2011.
4. Horticulture products: Fruit inflation was in high 20s - 40% range in the beginning of the year but by the middle it moderated to 10% level. Vegetable inflation showed a sustained rise with reaching 20% levels by the middle of the year from 10% in the beginning.
5. Milk: It remained close to 11-12% level throughout the year.
6. Eggs, meat, fish: It has remained in 10-15% range throughout the year.

APMC Act Reforms

Erstwhile APMC Act Framework

1. Each state created controlled market and trade in notified agriculture commodities could happen only in the market. The market was managed by APMC. But these acts differed a lot - even in their vital provisions.
2. Commodity coverage: The manner of notifying the commodities for regulation varies from State to State. Some States like AP and HP have included all the commodities while others regulate only a few.
3. Market Committee: Each state has an APMC to regulate the markets. In TN, only one APMC is constituted for all the regulated markets within a district.
4. Agricultural Marketing Boards: Agricultural marketing boards were established for expeditious execution of the market development work. In some States like AP, Odisha and TN they are advisory in nature while in Punjab, Haryana, Rajasthan, W.B., Karnataka and Maharashtra are statutory in nature and have powerful role.

Performance Review of Existing APMC Acts

1. Functioning of APMCs: The marketing committees do not allow the traders to buy from the farmers outside the specified market yards which adds to the costs. In most states regular elections to APMCs don't take place and they are superseded by the government. In many others the bureaucrats manage them. Their role has increasingly come about to be limited to collection of market dues.
2. Lack of geographical coverage: Despite expansion in the number of regulated markets, the area served per market yard is quite high. The national average is 454 sq. km. The farmers are, therefore, required to travel long distances to reach a market place.
3. Lack of amenities in the market: Though the Acts stipulate for the provision of some prescribed facilities and amenities in each market yard, in several markets, the facilities/ amenities actually created are far from the prescribed norms. With the expansion of production and lack of development in the market there is considerable congestion, delays, corruption, cut in payments to the farmers and poor quality control. Only ~ 7% of the total quantity sold by the farmers is graded. Cold storage is available only for 9% of fruits and vegetables.
4. Rural periodic markets: Apart from the primary markets, there are thousands of smaller rural periodic markets where small and marginal farmers and livestock owners sell their produce. Most of them don't have even the basic amenities like sheds for shelter from sun and rain.
5. Role of rent seeking traders, commission agents etc.: They have organized themselves into strong associations and don't let new traders enter the market thus limiting competition.
6. High taxes: Market fee was initially envisaged to be reinvested in the development of the market. But nothing was reinvested and total charges became close to 15% in many states and a source of revenue for the government. The taxes are levied @ multiple points adding to the transaction costs.
7. Exploitation of the peasant and high wastage: All the above factors mean that farmer gets only 20 -25% of the end price and the wastage rate is high.

Review of Implementation of Market Reforms

1. Adoption of provision related to Private markets: The Model Act suggests allows private markets managed by persons other than APMCs. Only 17 states (AP, NE, Gujarat, Goa, HP, Karnataka, MP (only direct purchase), Maharashtra, Odisha (excluding paddy), Rajasthan, Jharkhand and Uttarakhand have enabled it but rules have not been notified by all. Andhra Pradesh has formulated rules which stipulate a license fee of Rs 50,000 and minimum cost of Rs 10 crores for setting up of private markets. Some states have also prescribed a minimum distance of these markets from the APMC markets. Such stipulations severely limit the impact.
2. Provision for Direct marketing: The Model Act provides for granting licenses to processors, exporters etc. for purchase of agricultural produce directly from farmers. Only 15 states (AP, NE, Gujarat, Goa, HP, Karnataka, MP, Maharashtra, Odisha (excluding paddy), Rajasthan, Jharkhand and Uttarakhand have so far made this provision. But AP has imposed a requirement of a license fee (Rs 50,000).
3. Provisions for Contract Farming: The Model Act provides for permitting contract farming by registration of contracts with APMCs and exemption of market fee on such purchases. 20 states have allowed it without exempting from market fee. 11 other have allowed it with the exemption from the market fee. Karnataka has only exempted 30% of market fee under contract farming. Andhra Pradesh requires the buyer to render a bank guarantee for the entire value of the contracted produce. One of the biggest concerns is that APMC, who is the major market player, is also a registering authority for contract farming and the arbitration process is not time bound.
4. Single Point levy of Market Fee: Only 13 States have provided provisions for single point levy of market fee. However, the rates of market fee vary generally between 0.5% to 2%. Many states like Punjab levy additional charges apart from the market fee.
5. Commission Agents: The Model Act stipulates prohibition of commission agents . MP, Chattisgarh, Mizoram, Nagaland and Sikkhim have amended the Act and made the provision, it is doubtful whether this provision will be implemented in letter and spirit.
6. Establishment of Farmers markets (Direct Sale by the Farmers): The Model Act provides for establishment of such markets where no market fee is levied on farmers, though some service charge may be imposed. Such markets can be established either by the APMCs or by any person licensed by the APMC for this purpose. However, long before the circulation of Model Act, several States had promoted Farmers' Market. These include Punjab and Haryana (Apni Mandi), Rajasthan (Kisan Mandi), Andhra Pradesh (Rythu Bazar), Tamil Nadu (Uzhavar Shanthigal), Maharashtra (Shetkari bazaar) and Odisha (Ksushak bazaar). These markets have benefitted both farmers and consumers; but it has been noted that with lapse of time, small traders have taken over the place of farmers in many of these markets. 17 states have made provisions in their Act.
7. Mandatory utilization of market committee fund for market development: The Model Act provides for application of market committee fund for promotion and modernization of market only. Out of seventeen States, which have recently amended their Acts, three have no such suggested provision.
8. Essential Commodities Act, 1955: State Governments often issue control orders promulgated under the EC Act adversely affecting trading in agricultural commodities.

Due to the uncertainty private investment in large scale storage and marketing infrastructure has been lacking. Thus is important to make a distinction between an investor and a black marketer/hoarder in the application of the EC Act, 1955.

Alternative Marketing Models

1. SHGs: SHG based collective marketing. Viable as SHGs have come up under NRLM. They provide economies of scale and can also obtain credit from banks.
2. Modern Terminal Markets: It works under the National Horticulture Mission. It is a hub (main market) and spokes (collection centers) model in PPP mode. There is a provision of equity participation by producer associations up to 26%. This Scheme is reform linked and would be implemented in those States who have amended their APMC Act.
3. Contract farming: The Model Act allowed the contract farming sponsor to also provide input and technology support to the farmer. It mandated the registration of sponsoring companies, recording of the contract farming agreement, indemnity for securing farmers' land and laid down a time bound dispute resolution mechanism. Contract farming has been prevalent in various parts of the country for commercial crops like sugarcane, cotton, tea and coffee, etc.
4. ITC e-Choupal: It seeks to address the constraints faced by the farmer arising out of small and fragmented farm holding, weak infrastructure, supply chain intermediaries and the lack of quality and real time information. ITC has set up small internet kiosks at the village level to provide farmers real time market information related to prices, availability of inputs, weather data and other matters related the farmers. Local level farmers, called 'Sanchalak' run these kiosks. Online extension services are also provided. It is estimated that ITC intervention in supply chain has permitted farmers to increase their sales realization by 10-15%.
5. Virtual Markets: Spot exchanges and negotiable warehouse receipt system effect physical delivery of the goods and may therefore be recognized as more effective marketing instruments for the primary producers. Producers can hedge their goods or take pledge loans against the warehouse receipts so that they are not forced to resort to distress sales. However today, the spot exchanges seem to be operating in a legal vacuum as there is no specific law regulating them. Some States have issued licenses to Spot Exchanges as a buyer under the existing APMC acts. There is a need for Government of India to enact a legislation to enable spot exchanges to function on pan-India basis without any conflict with State APMC laws.
6. Rythu Bazar: It is an initiative to create infrastructure facilities to enable farmers to sell their products directly to consumers. Typically, a Rythu Bazar covers 10 to 15 villages. Transport facilities, online information of prices etc. are also provided.
7. Shetkari Bazar: It is another direct marketing model. It helps small farmers with small quantity of perishable fruit and vegetables. The Shetkari Bazars are located in all districts and are managed by APMC from the area. The produce brought by farmers is not levied cess. APMCs get bank credit for establishment of the market.

New Government Initiatives

Market Research Information Network (MRIN)

1. This provides online agriculture commodities market information in the APMC run mandis. Prices as well as stock information is given.

Grameen Bhandaran Yojana

1. It provides a subsidy of 25% of the project cost to all categories of farmers, agriculture graduates, cooperatives and CWC/ SWCs. All other categories of individuals companies and corporations are being given subsidy at 15% of the project cost. Since inception 30 MT projects have been sanctioned.

Q. Critically evaluate the reasons for fluctuations in agricultural prices in India. What would the components of an optimum agriculture price policy regime for India?

Food Security
Farm Subsidies
Minimum Support Prices (MSP)
Buffer Stock and Food Security
Technology Missions

Major Cropping Patterns
Irrigation Systems
Different Types
Transport and Marketing of Produce
Issues and Related Constraints
E-Technology in the Aid of Farmers

Animal Rearing
Economics

Planning

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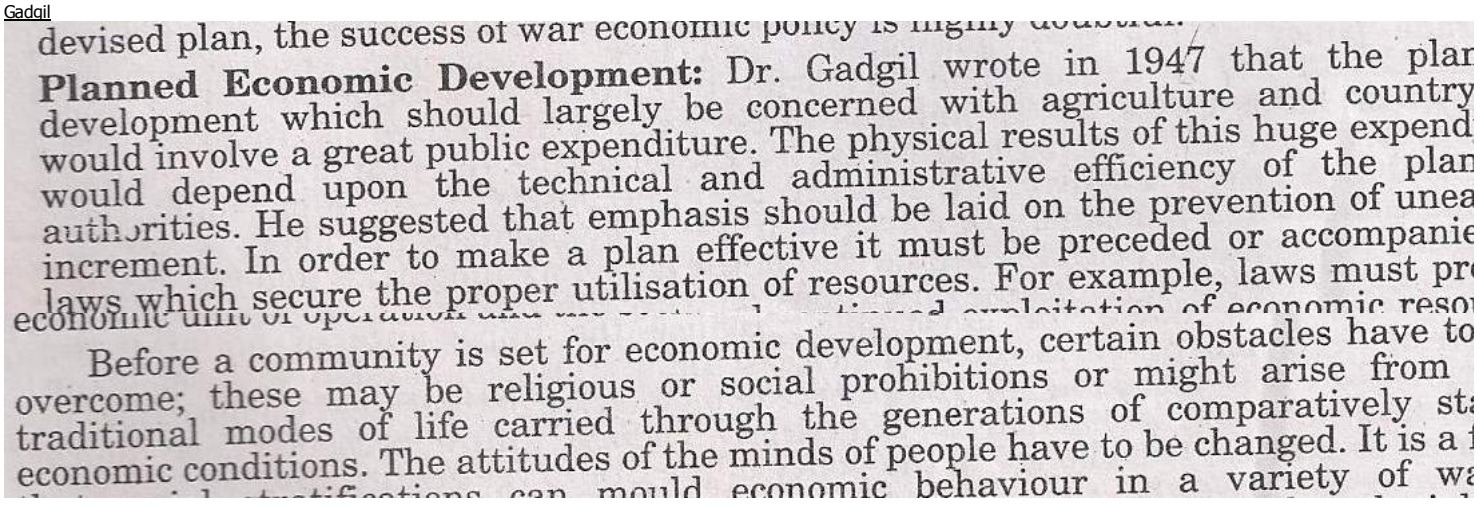
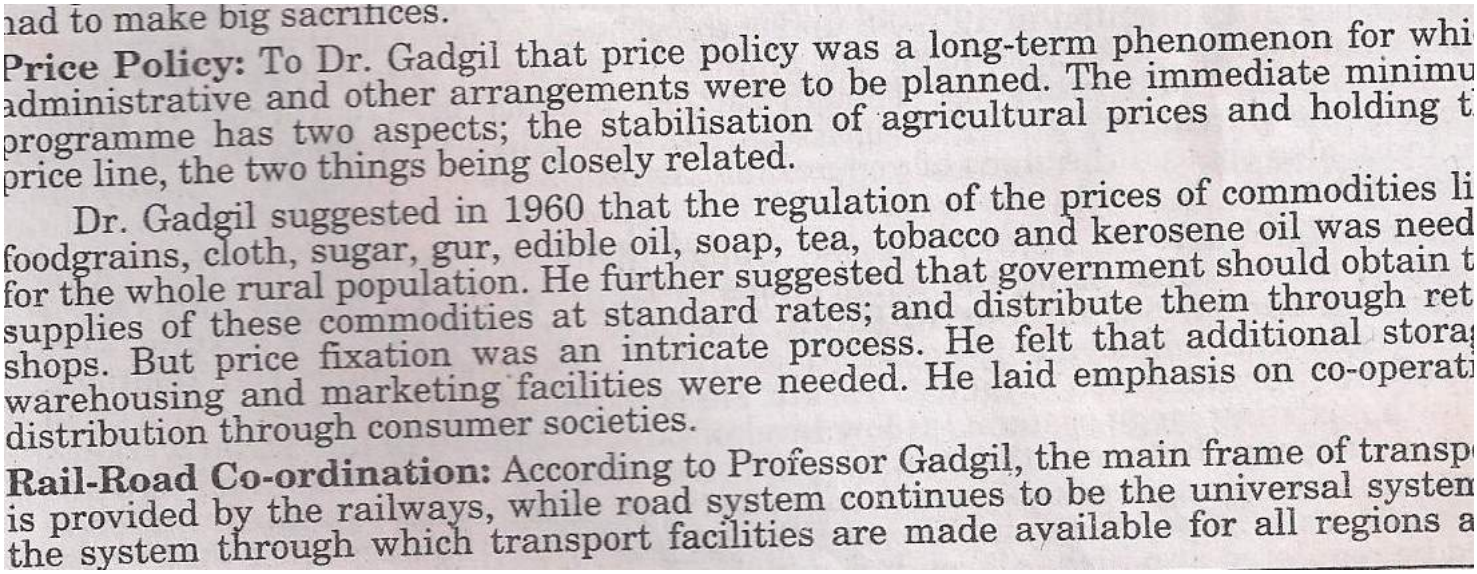
Eminent Economists
Gadgil


devised plan, the success of war economic policy is highly doubtful.

Planned Economic Development: Dr. Gadgil wrote in 1947 that the plan development which should largely be concerned with agriculture and country would involve a great public expenditure. The physical results of this huge expend would depend upon the technical and administrative efficiency of the plan authorities. He suggested that emphasis should be laid on the prevention of unea increment. In order to make a plan effective it must be preceded or accompanie laws which secure the proper utilisation of resources. For example, laws must pr economic unit of operation and the continued exploitation of economic reso

Before a community is set for economic development, certain obstacles have to overcome; these may be religious or social prohibitions or might arise from traditional modes of life carried through the generations of comparatively st economic conditions. The attitudes of the minds of people have to be changed. It is a stratifications can mould economic behaviour in a variety of wa

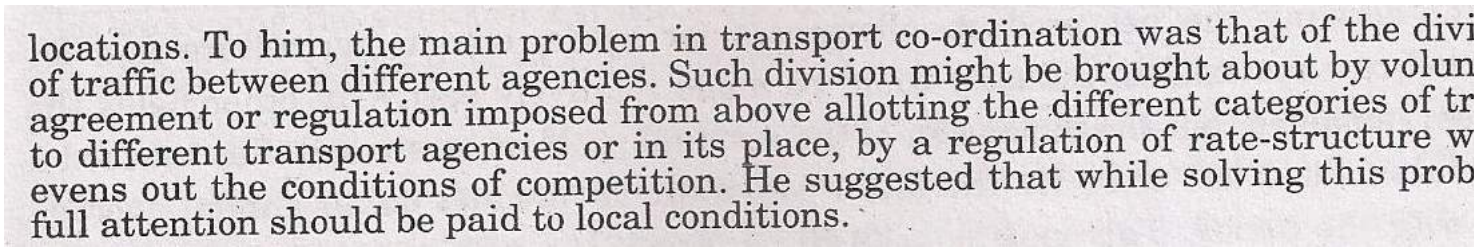


had to make big sacrifices.

Price Policy: To Dr. Gadgil that price policy was a long-term phenomenon for whi administrative and other arrangements were to be planned. The immediate minimu programme has two aspects; the stabilisation of agricultural prices and holding t price line, the two things being closely related.

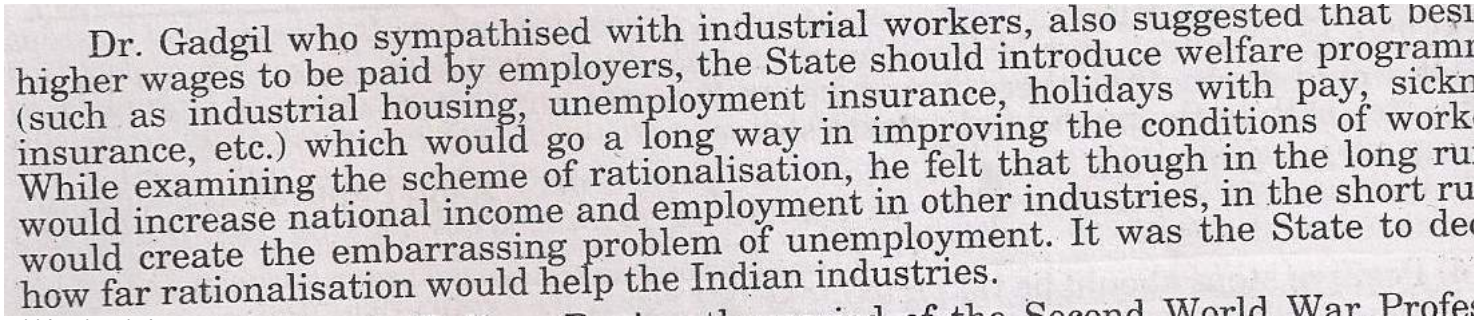
Dr. Gadgil suggested in 1960 that the regulation of the prices of commodities li foodgrains, cloth, sugar, gur, edible oil, soap, tea, tobacco and kerosene oil was need for the whole rural population. He further suggested that government should obtain t supplies of these commodities at standard rates; and distribute them through ret shops. But price fixation was an intricate process. He felt that additional stora warehousing and marketing facilities were needed. He laid emphasis on co-operati distribution through consumer societies.

Rail-Road Co-ordination: According to Professor Gadgil, the main frame of transp is provided by the railways, while road system continues to be the universal system the system through which transport facilities are made available for all regions a



locations. To him, the main problem in transport co-ordination was that of the divi of traffic between different agencies. Such division might be brought about by volun agreement or regulation imposed from above allotting the different categories of tr to different transport agencies or in its place, by a regulation of rate-structure w evens out the conditions of competition. He suggested that while solving this prob full attention should be paid to local conditions.

1. He was a pioneer of cooperative movement in India and had setup the Maharastra sugar cooperatives. In his PhD thesis, he criticized the £ policy of deindustrialising India and showed Lewis model (transition of surplus labor from agriculture to organized sector) was not applicable to India.
2. He was a great persuader and persuaded the bureaucracy and others about the utility of planning. He wanted to encourage local bodies and reign in bureaucrats.
3. He strongly believed that the deprived class should get its fair share and for this the rich had to be regulated. He introduced the concept of decentralized planning. This concept has been included in the 74th Amendment and now Zila Parishads are required to prepare District Development Plans.



Dr. Gadgil who sympathised with industrial workers, also suggested that besi higher wages to be paid by employers, the State should introduce welfare programr (such as industrial housing, unemployment insurance, holidays with pay, sickn insurance, etc.) which would go a long way in improving the conditions of work While examining the scheme of rationalisation, he felt that though in the long ru would increase national income and employment in other industries, in the short ru would create the embarrassing problem of unemployment. It was the State to de how far rationalisation would help the Indian industries.

Vakil (Bombay Plan)

Q. Throw light on wage goods model of CN Vakil and PR Brahmanand. (2011, II, 15)

Features

1. Wage goods are the typical consumer goods necessary for subsistence and work. Since not all capital goods are related to wage good production, only those capital goods should be encouraged which help in wage goods. This integrated wage goods complex should grow at a rate higher than population growth in order to absorb disguised unemployment.
2. The disguised labor earns λ.w which is the APPL in agriculture. If he is employed in the wage goods sector, he will be paid w. So increment for him will be (1-λ).w. Thus he consumes less and produces more. So a multiplier effect comes into play.
3. This surplus is the savings which if channelized back, can fuel multiplier growth. Also since the capital-output ratio is lower, lower savings is required for growth.
4. This would lead to equal distribution of wealth. Locationally it will be defused, non inflationary. No dependence on foreign capital.
5. Since diminishing returns will creep in, population growth needs to be stabilized before output gets stabilized.

Limitations

1. It ignores TFP gains.
2. It ignores the necessity of forward and backward linkages, development of infrastructure.
3. It will only lead to short term gains.
4. It is high cost and inefficient. Contrary to modern factory system of production.

Comparison with Mahalonobis Plan

1. Mahalonobis was not concerned with employment which was central to Gadgil.
2. Mahalonobis plan was inflationary since capital goods investments have long gestation period. So while AD increases, AS doesn't.
3. Gadgil was more of a private venture plan, Mahalonobis was left oriented plan.
4. Gadgil model was the export oriented model pursued by SE Asian countries while Mahalonobis model was an import substitution model.

Other Contributions

1. He did a study of £ India's fiscal policy and proved that Indian interests were not always kept in mind. He then asserted that in following India's fiscal policy, Indian interests only should matter.

Dr. P.R. Brahmanand. In the first book he discussed the main features of the **Fi Five-Year Plan**; and pointed out its shortcomings. He felt that as the Plan took i account all the circumstances then prevailing in the country, it was undoubte realistic, but it suffered from certain minor defects which might be removed. First, four per cent rate of investment as envisaged in the plan, was doubtful, but effo should be made to sustain it. Secondly, to achieve the food production target, la should be checked from being diverted from food to commercial crops. Thirdly, burden of taxation should be shifted to speculators and traders. Fourthly, capi intensive projects should be attached due importance.

(a) The Central and State budgets for 1966-67 should be revised immediate Budgets should be balanced; and, if possible, surplus;

(b) The government should issue an ordinance freezing all incomes at least f year. It would mean that there would be no increase in wages, salaries, divide profits, etc., both in the public and private sectors;

(c) In order to prevent a rise in prices, the government should appeal to peopl avoid unnecessary expenditure, all to traders to refrain from raising the price essential commodities;

(d) Positive steps should be taken to make our economy export-oriented;

(e) Immediate steps should be taken to restrict the internal consumption of s exportable items in order to have enough for exports; and

(f) The production of both traditional and non-traditional goods should increased; and strenuous efforts should be made to keep prices under control.

VRV Rao

1. He was an eminent educationalist and was education minister under JLN. He founded DSE, IISSc.
2. He was associated with NI accounting and the modern system of statistics collection was setup by him.

The general approach was through a census of production of goods and servi
examined some of the arguments adduced by earlier writers on India to exclude
He also noticed the already patent Russian estimations excluding services.
position was one that Marshall and Pigou had taken, i.e., to include everyth
which there was a money-price. Some preliminary questions like those of depre
and obsolescence were discussed on the well-known lines made familiar by Pigou a
practical application, the deductions permissible by the income tax authorities
accepted. He accepted the limitations of the concept of national income and
measurement, particularly for economies with a substantial non-monetised eleme
he also explained some of the difficulties of international comparison. One feels,
reading his introductory discussion, that one is getting a practical application of
Marshall had developed in his definition of the National Dividend in his **Principle**
what Pigou wrote in his **Economics of Welfare**. He could thus easily come
framework in which the gross value of the domestic product of all goods and se
was first to be reckoned at the market prices. Then there were deductions for the de
in inventories, exhausted inputs, depreciation, balance of trade and the net increa
foreign indebtedness. The indirect taxes were then excluded and one would ge
factor-cost computation. He did not accept Colin Clark's idea of taking the goods
services 'available for consumption' rather than those 'offered for sale', the latter b
more precisely measurable, both for services and for durable consumer goods. In e

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In his actual exercise, Rao did not try to calculate the net value added in al
sectors, but adopted the census of incomes approach wherever convenient. The g
income was measured partly through direct estimation or the 'inventory method'
for agriculture) and partly through the 'income method' (e.g. for trade and transpo
for the public force and administration, liberal arts and domestic service). For indu
direct information was partially available for the large-scale sector only and
remaining industrial income had to be calculated indirectly. For the service inc
assessed by income tax, the position was easy, but the number of income tax payers
only a very small fraction of the total number of income-earners. Rao noted carefull
fact that the census definition of an 'occupied person' did not necessarily mea
'income-earning person.'

The procedure Rao adopted to arrive at his estimates is not as important as the
that Rao made a very thorough use of all available data on agriculture and can
estimates that could not probably have been improved at that time. There was a
deal of unverifiable assumptions in the estimation of the value of the livestock prod

but what was commendable was that he laid his methods of estimation openly b the reader. In the case of organised industry, Rao's approach was mainly throug incomes of workers engaged in the sector, though it should have been possible to co an evaluation of the net value added in some industries. The available dat industrial wages were carefully compiled. If all secondary production, or the major of it is lumped together, irrespective of the scale of operation and labour-intensity, may be disparate elements which will not cancel themselves in the aggregate r When one looks from these to the estimates for artisans, or skilled independent u workers (like barbers or washermen) or even persons engaged in the professions liberal arts, one comes to estimates where the element of guess work is large estimates of the income from house and other property was also largely depende enlightened guesses, for there was no reliable measure of the total value of such prop

The total figure for British India in 1931-32 was found to be between Rs. 1,589 and Rs. 1,790 crore, or to take the mean, Rs. 1,689 crore, with a margin of error of cent on either side. On the basis of the census of 1931, the average was Rs.62 p minus 6 per cent. Two further assumptions were made at this stage, viz. that the o statistics of the agricultural output were under-estimates, being about 10 per cent the actual output, and that there was a 5 per cent under-estimate in the case of in assessed to income tax. Correcting for the under-estimation, Rao came to a ra Rs. 1,665 crore to Rs. 1,867 crore, or to a mean figure of Rs. 1,966 crore plus or mi per cent, which would give a per capita income of Rs.65 with the same margin of The per capita figure in the earlier estimate for 1925-29 was Rs.78 which, if correct

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the Calcutta wholesale price index, would come down to Rs. 49. Rao argued i Preface that the Calcutta wholesale price index would not be a reliable deflat national income estimates. The comparisons were, therefore, not quite meaningful.

Rao's most important contributions lay not in the indirect estimates, which more scientific than earlier attempts, but in his straightforward metho computation. The techniques of estimation have become more scientific now, reliable data are available and the final processing is more dependable than th four decades ago. But still the element of intelligent guess in our national i estimation remains important. The value of Rao's work still remains high. The

History
Initial Efforts

1. In
1938, a National Planning Committee was setup with Nehru as its head. But it had no experience in planning and all it did was to highlight the set of problems an independent India wou ld need to handle urgently.
2. In 1945, M N Roy came up with a People's Plan.
3. A group of leading industrialists too came up with their own plan chalking out clear priorities and approach. This is called Bombay Plan.
4. In 1950, Nehru setup the Planning Commission with some politicians, industrialists and retired civil servants. They took help of leading economists of the nation, however, at that time economics had not developed much and economists were not of much help.

1st FYP
Targets

1. Savings: Domar Model says: $\delta I / I = \delta Y / Y$ = Savings Rate x Marginal Efficiency of Capital. MEC = $\delta Y / \delta I$. It is assumed here that GDP growth is investment led. So efforts were made to increase the savings rate of the economy. Initially SR was 5% and the target was to make it 20% by 1967 (end of 3rd Plan) and maintain at that level till 1975. If that happened India could achieve a growth of 5% p.a.

Philosophy

1. Basic cause for backwardness was seen in lack of capital accumulation and not lack of demand. So the focus should be on investments.
2. Lack of capital accumulation was due to lack of savings.
3. Even if domestic savings could be raised there were structural problems in converting these savings into investments.
4. Agriculture is subject to diminishing returns but industry is not and it can absorb surplus labor from agriculture.
5. A reliance on market mechanism would increase wealth in the hands of rich and lead to over consumption and lack of capital accumulation. At the same time a revolutionary redistribution of assets would be counter productive as well. So inequality to a certain degree can be tolerated.
6. The 1st FYP document better understood the need of indicative planning in a mixed economy and sought to coordinate the industrial planning with the formulation of other economic policies like customs, excise, fiscal, EXIM policy etc. The second and later plans were more concerned merely with allocation of public resources and much less with policy formulation and coordination.

2nd FYP
Philosophy

1. The pillars of Nehru - Mahalonobis strategy were - (a) high savings rate, (b) heavy industry bias, (c) protectionist policies and public sector, (d) import substitution, and (e) socialistic pattern of society.
2. Mahalonobis made 2 modifications: (a) Harrod Domar assume that additional Investment comes from profits made. Mahalonobis changed it to state generated since India was to follow socialistic path. (b) Harrod Domar have single sector economy. Mahalonobis changed it to 2 sector and 4 sector.

Performance

1. Industrial output grew @ 8 - 10% p.a. Food grains grew @ 3% p.a. Per capita income grew @ 1.75% p.a.

Mahalanobis' 2 Sector Model

$\beta\kappa = \delta Y / \Delta I$ (in capital goods sector)
$\beta c = \delta Y / \Delta I$ (in consumer goods sector)
$\lambda\kappa$ = Share of capital goods sector in Investment
λc = Share of consumer goods sector in Investment
α = Initial Investment / Initial Y
$\ddot{Y} = \{\alpha * (\beta.\lambda\kappa + \beta c.\lambda c)/\beta\kappa.\lambda\kappa\}.\{(1+ \beta\kappa.\lambda\kappa)^t -1\}$

Heavy Industries vs Light Industries

1. Long term growth argument: It is clear that over a long term, higher the $\lambda\kappa$, higher the growth. So he stressed on investing in commanding heights of the economy, to sacrifice present consumer goods for capital goods.
2. Import substitution argument: India will no longer need to rely on imports of foreign capital goods which are the critical imports.
3. Savings: If a high savings rate is to be achieved and sustained profitable investment opportunities have to be provided on a sustained basis. Such opportunities will only arise and remain if we invest in capital goods.

Implications of Heavy Industries Strategy

1. Small scale and wage good industries: The importance of wage goods industries was recognized in the plan documents. It was acknowledged that heavy industries have long gestation period and in the situation of increased money but no corresponding increase in supplies inflation would result. Moreover population was increasing and increasing population needed increased consumer goods. But the production of consumer goods was left to private small scale sector since factories didn't offer a huge advantage over small units and also input-output ratio was large and gestation period was small.
2. Place of agriculture: Agriculture's importance was also recognized in the plan documents and it was emphasized that India can't progress until we have to import food. Food inflation and scarcity could easily derail any planning.
3. Place of public sector: It was given a dominant role since the gestation period was long, profits were low so private sector would not be capable. This would help check monopolies, give government better control of economy and help usher in a socialistic pattern of society.
4. Role of private sector: Large areas of economy were left to private sector but it was expected to play a complementary role to public sector. It had to function harmoniously with the planning objectives.
5. Role of foreign trade and capital: Foreign capital in the form of aid was heavily relied upon due to lack of domestic savings as well as foreign exchange reserves. Export promotion was envisaged but was neglected.
6. Employment objective: Naturally investment in capital intensive industries was in conflict of employment objective so the plan also talked about encouraging consumer goods industries.

Fiscal Policy

1. The plan envisaged that industrialization was beneficial only with more equitable distribution of wealth. So a socialistic fiscal policy of higher taxation and distributions was envisaged. High and progressive tax rates were used.

Why we chose Import Substitution

1. Economic base of India was too narrow and at best it could export selected primary items. Import substitution would help it develop a broad based diversified industry and enter into world trade on favorable ToT later.

The Need for Rapid Industrialization

1. Diversification argument: @ the time of independence, India was largely an agrarian economy. Industrialization would mean diversification and hence strengthening of economic base.
2. Productivity argument: Agriculture was suffering from low productivity (~0 or even negative marginal products). So there was a need to relieve it of the population pressure and shift the surplus to industries.
3. Core sector argument: Industrialization provides capital inputs to agriculture as well as serves as a source of demand for agriculture products.
4. Growth argument: Industries have higher productivity and hence higher growth is achievable.
5. Export promotion and import substitution argument: India will be freed from the necessity of importing capital goods. Also manufactured products have a better export market.

Role of State as Visualized in 50s

1. Need for land reforms: India's feudal land relations system meant no investable surplus remained in the hands of cultivator and instead was appropriated by a small group of zamindars and money lenders who would indulge in wasteful consumption. By reforming such a system state could get all the agriculture surplus.
2. Correct market failures: Education, health, drinking water, infrastructure projects etc.
3. Mobilization of savings: Low rate of savings reflected lower incomes but even those who had high incomes indulged in wasteful consumption as profitable investment opportunities were limited. So state should start public projects on large scale so as to encourage mobilization of savings.
4. Social justice.

Limitations of Nehru - Mahalonobis Model

1. It led to higher savings (from 7% in 1950-51 to 22% in 1977-78) and investment rates. It led to impressive development of infrastructure. It led to development of public sector. It led

to increased self reliance in terms of need of foreign aid (foreign aid contributed merely 1.5% to meet the planned GCF - GDS gap). But it had many drawbacks.
2. He assumed year after year λκ could be kept high. This was not possible in a country like India for the reason that it was a democracy and bulk of the savings came from household sector. Households can't be coerced by the state to save more. There were other leakages like market imperfections etc.
3. He assumes βκ remains constant i.e. marginal efficiency of capital is constant. It declines as more capital is employed and in a country like India, there are more leakages due to insufficient supervision, corruption, labor laws etc. He also assumes arbitrary values of many variables to prove his point.
4. He oversimplifies the inter-linkages between the sectors. He assumes machines can only be produced by machines. He ignores labor which can produce machines and in turn needs food grains not machines.
5. This model may work well for a rich economy. It assumes a large resource base so that part of it can be employed for long term gains. But India had nothing to eat. Investment was needed in food grains not steel which would yield benefits after 20 years - if everything works as per Mahalonobis thought.
6. Developing commanding heights requires advanced technology - something India didn't have, has long gestation periods and obsolescence was not accounted for. It is less labor intensive.
7. The management of the PSEs was full of general administrators and not professionals. They along with their political bosses used to treat PSEs as their fiefs and there was too much of political influence. Work ethics were poor and PSEs served only as huge wage bill sources without any commensurate productivity. In many cases populist policy interventions led to unsustainable losses for the PSEs.
8. It failed to alleviate poverty, unemployment, hunger and failed to give minimum standards of livings to Indians even after 5 FYPs.

4th FYP (1969-74)
Reasons for Change in Plan Philosophy

1. Domestic savings: Wars and drought decreased GDP in absolute terms and most foreign aid stopped coming. The government had to resort to IMF borrowing which had tight conditions attached. The earlier plans relied heavily on foreign aid for development and this strategy had to be discarded. Instead domestic savings must be encouraged.
2. Food security: There were famines in India as even food aid was stopped. So attaining self sufficiency in food grains became the top priority.

5th FYP (1974-79)
Plan Philosophy

1. Basic needs: Growth and industrialization didn't seem to improve the standards of living of the masses and mass poverty remained as acute. So concept or minimum needs emerged and focus shifted on directed poverty alleviation programmes.

Gandhian Model (Janta Plan)

1. Pillars: Its central objective is material as well as cultural well being of Indians. So lives in villages need to be improved and villages need to attain self sufficiency. Thus its pillars are scientific development of agriculture and rapid growth of SSIs.
2. Agriculture: Agriculture reforms have top priority as the central instrument to improve agriculture. Objective is national self sufficiency and maximum regional self sufficiency in food. Allied sectors like dairying should also be developed.
3. SSIs: State should help in revival of SSIs so as to make each village self sufficient. It compares against the development of capital intensive sectors and urbanization. Consumer goods sectors should be reserved only for SSIs and no medium or large industries should be allowed in these.
4. Basic industries: It was not against the development of basic industries rather recognized their importance. But their development should not impede the development of SSIs. Gandhian plan also puts ownership of basic industries with the state. Gandhi was not against machinery but just against the craze for machinery and indiscriminate use which leads to exploitation and substitution of labor.
5. Employment: Employment should become the focus of planning instead of production. High employment intensive sectors should be encouraged.

Q. Elaborate on Gandhian versus Nehruvian visions of Indian development. Do you think Gandhian approach is again attracting scholars and people? Give reasons. (2011, II, 30)
6th FYP (1980-85)
Plan Philosophy

1. Infrastructure: It acknowledged that Mahalanobis strategy of heavy industrialization had succeeded in increasing savings rate and investment. But excess capacities were not becoming evident. So focus should shift from heavy industry to infrastructure.

7th FYP (1985-90)

1. Focus on infrastructure continued.
2. New focus on outward looking strategy instead of import substitution. A gradual liberalization of economy was initiated.

10th FYP (2002-07)

1. GDP growth target: 8% (realized: 7.8%), savings rate target: 27% (realized: 31.4%), investment rate target: 28.4% (realized: 34%).

11th FYP (2007-12)
Targets

1. GDP growth target: 9% (realized: 8%), savings rate target: 35% (realized: 32%), investment rate target: 37% (realized: 35%).
2. Employment target: 70 mm job creation. Poverty reduction: 10%.
3. Reduce IMR to 28 and MMR to 100. TFR: 2.
4. Agriculture growth: 4%, industry: 10%, services: 11%.
5. Electricity, phone and broadband in every village.
6. Increased forest cover by 5% and energy efficiency by 20% (by 2017).

LPG Model
PURA Model
Q. Throw light on the PURA model of rural development. (2011, II, 15)

Changing Role of Planning
Role of Planning in a Market Economy

1. Deciding priorities: When resources are limited (as they always are) there is a need for the society to define its priorities. It doesn't matter whether it is a centralized planning or indicative planning, the priorities have to be defined.
2. Creating enabling environment: Government still remains very strong and businesses and government have to work in cooperation with each other. Businesses need government to create a conducive policy environment and remove bottlenecks.
3. Market failures.
4. Coordination problem: Someone has to coordinate the goals of different government ministries. After the 73rd and 74th CA Acts planning has become decentralized. So someone has to integrate all the plans and generate synergies.

Centralized to Indicative Planning
Arguments in favor of planning

1. Externalities: Positive externalities in terms of infrastructure development (indivisibilities concept included) and negative externalities in terms of environment conservation. Coordination failure hypothesis.
2. Social goods and inclusion: Provide welfare to people excluded by markets. Financial inclusion as well.
3. Market imperfections: Unhealthy practices, weak unions, poor peasants.
4. Mobilization of resources: Private sector may not be big enough or financial markets may not be big enough for it to mobilize resources.

Changes in Planning due to Liberalization

1. Planning would only be partial. Now indicative targets are fixed for investment in each sector, private investment is estimated and government investment performs the residuary role.

2. Change in emphasis of direct government expenditure from economic sectors to social sectors.
3. Planning to be based on consent and participation from multiple stakeholders. Instead of firm allocations, it would amount to fixing broad targets and setting right policy environment.

Amartya Sen and Dreze on State vs Market
They consider a conflict case between government and markets as incorrect. They instead think both are needed.

1. Cooperative action: Both are prone to failures and need each other for correction. Ex. globalization leaves out so many and government action is needed. Market externalities. The reforms needed in India are wide ranging and include corruption, environment, caste inequalities etc. which need to be tackled jointly.
2. Markets can hardly function in the absence of legal provisions and justiciable rights to property. An example of such a failure is privatization mania in Russia in 90s.
3. Government has a major role in initiating and facilitating market reliant economic growth as the case of E Asian countries shows us. Market needs government to provide policy framework, natural resource allocation etc.
4. Talks of radical reforms to 'kick start' the Indian economy are naive. This is because the relevant failures go much beyond the market incentives. Instead we have widespread poverty, illiteracy, malnourishment which are all the basic causes of failure and without correcting these no market system will succeed.

Decentralization of Planning
73rd and 74th CA Acts
(a) Provisions

1. Art 243 ZD created district planning committees which would integrate the plans prepared by various panchayats and municipalities in their area and submit to the state government. Similarly, Art 243 ZE provided for metropolitan committees which would do the same job in metropolitan areas.
2. Art 243G and Art 243W empowered the state legislatures to give powers of planning to individual panchayats and municipalities. 11th and 12th schedules of © were drawn out.
3. These amendments created © planning bodies as well as made planning process decentralized. However it needs iteration based planning approach.

(b) Steps for improvement

1. Police and legislative powers: PRIs should hold police and judicial and law making powers as well, thus creating district governments.
2. 13th finance commission: 13th finance commission recommended local bodies be given a share in divisible pool of taxes apart from what is given to states. It gives 1.5% of divisible taxes as basic grant and additional 1% (0.5% up to 2011-12) as performance grant conditional on state satisfying certain criteria. It gave a total of $18 bio as grants to PRIs in 2010-15 which is ~1.9% of divisible tax pool. Funds are allocate based on population (50%), area (10%), distance from highest per capital income state (10%), index of devolution (15%), SC/ST population (10%), grant utilization (5%).

(c) Issues

1. Reluctance of states: States are reluctant to part with their powers and empower PRIs. 73rd and 74th CA Acts provided for a review of all other laws @ state level to make them coherent with PRI functioning. But so far no states except for Kerala have cared to undertake such a review.
2. Standardization of finance commissions: State finance commission reports are available almost @ the end of the 5 year period, their tenures don't coincide with the central finance commission, their reports are not standardized. This gets translated into ad hoc grants by central finance commission. Similarly Action Taken Reports by the states are also not available on time to central finance commission.
3. Funding: Urban areas contribute ~60% of GDP yet urban bodies get only 0.75% of GDP as revenue. Funds given to panchayats are mostly tied to schemes and thus limit their flexibility.
4. Planning: District planning committees are neglected and don't even meet. Naturally they are not able to prepare district plans as envisioned in the ©. Collectors integrate the plans from various tehsils and send them directly to state government. Apart from normal planning route, there is a separate planning route for world bank assisted programmes. Plans for world bank projects are integrated at block levels and sent directly to state government bypassing the district planning committee. In official plan as well, there is no sectoral integration at any level - there is siloization into different schemes, different areas, different sectors with no coordination with each other. The planning exercise is a mere summation and no synergies are sought. Also it is done after the state budget and annual plan is finalized! So its quality suffers drastically as there is lack of sincerity.
5. Parallel bodies: A number of parallel bodies has come up mostly as a result of various schemes whose planning is done by different people with no coherence and common objectives. If PRIs are weak, instead of strengthening them, scheme makers bypass them.
6. Functioning of PRIs: Gram sabha meetings have poor participation of people living far off. They are not attended by the personnel of line departments and neither is there any training department for functionaries. They need to be brought under the control of gram sabha.

Q. Discuss the salient economic features of 73rd and 74th CA acts. (2011, II, 20)
Q. Bring out the role of state finance commissions in India, with particular reference to the rural economy (2011, II, 20)

Q. Delineate the role of the district planning committee. (2010, II, 15)

Q. Is economic planning relevant in the context of the globalized economy of India? Elucidate. (2007, II, 20)

Public Expenditure Management

Rangarajan Committee
Recommendations

1. Plan vs Non Plan: Abolition of distinction between plan and non plan expenditure. Instead budgeting should be linked to outputs and outcomes. A new accounting classification should be introduced with uniform codes for central programs, sub-programs and schemes implemented in States. A website to be setup to provide information of flow of funds and resources to the citizens.
2. Scope of FYP: The FYP scope should be expanded to include central budget, PSUs, SPVs etc for which the Planning Commission should remain the lead body.
3. Role of MoF: MoF continues to have lead role in preparing annual budgets and rolling 3 year plans.
4. Role of Individual Ministries: Individual ministries will be responsible for carrying out 3 year rolling plans for their department within the ceiling defined for them.
5. Plan vs Budget: Better coordination between budgets and plans. States to take Planning Commission's approval on their Annual Plans before passing their annual budget. Currently, they pass their state budgets and only then submit the Annual Plan for review. State budgets to include SPSE and local government finances as well.
6. Role of Planning Commission: The Planning Commission should be a supra ministerial body assessing the financial resources and needs of all central government departments together with the Ministry of Finance.
7. Monitoring: Central Plan Scheme Monitoring System should be rolled out to all central schemes even if they are to be implemented by states. The funds should be routed through the state treasuries and open to CAG audit.

Limitations

1. It doesn't provide any parameters or definitions of PEM efficiency. Currently there are none to measure the efficiency. So the committee should have laid down some benchmarks. Only then can we hope of better utilizing or public funds.
2. It is based entirely on committee meetings deliberations only. No field visits etc. were done. It doesn't even draw upon international experiences for its recommendations.
3. It doesn't spell out any timelines for changes.

Plan vs Non-Plan Expenditure
Advantages of Abolishing the Distinction

1. It will make linking budgetary outlays to outcomes easier. Money will be laid out for one project as a unit and outcome can be measured.
2. Currently each project has a plan and a non-plan component. Money is sanctioned for both separately. Some non-plan expenditures may be crucial for the success of the project but due to the taboo that non-Plan expenditure is bad, those expenditures may be curtailed. Or simply since different people are making the allocations in different contexts and have different priorities, the project on a whole may suffer.
3. Essential non-plan expenditure also suffers. For example creation of government posts, maintenance of roads.
4. Currently projects which are not completed on time are put in non-plan and then are neglected. This leads to huge wastage of public money.

Plan Expenditure

1. Expenditure spent on productive asset creation through Centrally-sponsored programmes and flagship schemes. Around 30% of the spending by the Union government is Plan expenditure.

Non-Plan Expenditure

1. All other expenditure such as defence expenditure, subsidies, interest payments, including expenditure on establishment and maintenance activities such as salaries.

Chaturvedi Committee on Centrally Sponsored Schemes (CSS)

1. CSS are generally inflexible to local needs and are seen as infringing upon state autonomy. So Chaturvedi committee was created.
2. It recommended bringing down CSS from 147 to 51. CSS < Rs. 100 cr should be weeded out or amalgamated. Flagship Schemes should continue.
3. Flexi-funds should be earmarked in Flagship Schemes to enable experimenting to suit local needs. 20% of the expenditure should be as per states' directives (10% in case of flagship schemes).

Mining

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The Mines and Minerals (Development and Regulation) Bill, 2011

1. It provides for profit and royalty sharing with the project affected people. 26% of the profit will be deposited in a district committee (to look after the interests of the displaced) but that committee will be dominated by mine owners and bureaucracy with nominal representation of the locals. Approval of local bodies has been done away with for setting up mines.
2. Mining Regulatory Authorities will be setup at national and state levels for select major and minor minerals respectively.
3. Special courts at state level and a tribunal at national level to dispose off cases of illegal mining.
4. Additional powers given to states in mine allocation process.
5. It provides for giving weightage in grant of prospecting license or mining lease in notified area to such applicants who have committed ore linkage through long term agreements with domestic industry.

Report of Parliamentary Committee

1. The Parliamentary panel recommended removal of the provision of 26% profit sharing by coal miners with project-affected people and replacing it with a system based on royalty payments. The collected money was proposed to be used for the welfare of the project-affected persons through a newly created District Mineral Foundation.
2. It also called for bringing District Mineral Foundation under the CAG audit purview and asked the government to increase representation of local community in the DMF council.

Rat Hole (Coyote Hole) Mining in Meghalaya

1. Meghalaya has no mining policy and individuals operate at will. Miners use rudimentary gear and face multiple risks including lung diseases by inhaling coal dust. Most of the land is tribal owned who consider it a matter of customary right to extract coal.
2. Coal is Meghalaya's biggest source of revenue so it may not be possible for it to ban coyote mining suddenly.

Corruption in Mining
Recommendations of Shah Commission on Illegal Mining

1. It recommends ban on iron and manganese ore exports.
2. Reason is that due to high Chinese demand, the prices have gone up multiple times and mafia has gotten involved. This mafia can corrupt the state agencies and is underselling national wealth.

Recommendations of Ashok Chawla Committee on Natural Resource Allocation

1. The Committee identified coal, minerals, petroleum, natural gas, spectrum, forests, water and land as resources where Union Government has a major role in allocation process.
2. It recommended to standardize the format of minutes for all allocation decision meetings and making them public.
3. The creation of an National Data Repository (NDR) for petroleum exploration. Open Acreage Licensing Policy (OALP) should be followed for oil/gas block allocations i.e. anybody can apply @ any time as opposed to the current system where periodic auction is held by the government. A trading platform / exchange be created for the transparent trade of natural gas.
4. Coal blocks should have competitive bidding and a trading platform should be created to trade excess coal.
5. All future telecom licenses should be unified licenses and spectrum de-linked from the license.
6. A comprehensive national legislation should be enacted on water related issues. This can be done by bringing water in concurrent list or by getting approval of majority of states.
7. The land available with Central Government Ministries and Departments should be inventoried and all future sale should take place through e-auctions.

Rare Earths
Current Market Situation

1. Rare Earths consist of strategically critical metals like tin, cobalt, lithium, germanium, beryllium, gallium, bismuth, selenium, indium etc. and are used in defence, space, nuclear, co mmunications industries, electric turbines, wind mills, televisions etc.
2. Global demand for Rare Earths was 100K tonnes in 2009 which is expected to go up to 200K tonnes in 2015. China is the largest producer and supplier producing ~ 90% of total and exporting 60% of total. But it has placed export restrictions on rare earths.
3. Mining and processing of rare earths causes pollution. So developed countries don't mine it in their own lands. Japanese company is opening a plant in Odisha to mine rare earths from monazite sands.

India's Rare Earth Policy

India has only now tried a first attempt at formulating a national rare earths policy. The key features are:

1. A bunch of strategic minerals are pooled into a basket and the working group on the 12th Plan envisages setting up a national body with a corpus of Rs. 500 cr to source these minerals.
2. To identify countries with which bilateral agreements could be signed quickly for sourcing rare earths.
3. To build a national stockpile of these minerals with Rs. 1000 cr initially.
4. Focussing on R&D.
5. Encouraging domestic production by incentivizing by-product recovery as most of these minerals occur as by-products in the smelting and purification processes of other minerals.
6. The Department of Atomic Energy is to reassess its rights over monazite beach sands as they contain rare earths. India has large deposits of beach sands but it is expensive to extract rare earths from them.
7. Detailed geological survey be carried out to find new sources.

Finance Commissions

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Situation @ Independence

1. 50% of Income tax was given to states.
2. 62.5% of export duty collected from jute went to jute producing states.
3. Sarkar Committee in 1948 recommended states' share to go up to 60% but was rejected by JLN.
4. Deshmukh Committee in 1949 recommended grants to be given to jute producing states instead of share in taxes.

1st Finance Commission (1951)
Recommendations

1. Income Tax: States' share to go up to 55% from 50%.
2. Allocation Among States: IT allocation should be done on basis of population (80% weight) and revenue generated in the state (20% weight). For others, it stressed the need of doing it on basis of need of the state.
3. Excise Duties: They were growing in importance. 40% of excise duty collected from some commodities like tobacco, vegetables etc. allocated to states.

2nd Finance Commission (1956)
Recommendations

1. Income Tax: States' share to go up to 60% from 55%.
2. Allocation Among States: IT and Excise Duty allocation should be done on basis of population (90% weight) and revenue generated in the state (10% weight).
3. Excise Duties: They were growing in importance. 25% of excise duty collected from additional commodities allocated to states.
4. Railway Taxes: To be distributed according to route mileage in a state.

Limitations

1. Railway Taxes: Route mileage is inappropriate since it ignores the intensity of usage.

3rd Finance Commission (1961)
Recommendations

1. Income Tax: States' share to go up to 66.67% from 60%.
2. Allocation Among States: IT and Excise Duty allocation should be done on basis of population (80% weight) and revenue generated in the state (20% weight).
3. Excise Duties: They were growing in importance. 20% of excise duty collected from additional commodities (now 35) allocated to states.
4. General: It also highlighted overlap of FC and PC specially in matters of special grants to states.

4th Finance Commission (1965)
Recommendations

1. Income Tax: States' share to go up to 75% from 66.67%.
2. Allocation Among States: IT and Excise Duty allocation should be done on basis of population (80% weight) and revenue generated in the state (20% weight).
3. Excise Duties: They were growing in importance. 20% of excise duty collected from all commodities allocated to states. On some commodities like tobacco, sugar, the allocation wold be 100%.
4. Grants: FC grants are unconditional as opposed to PC's conditional grants. 4th FC raised the grants significantly.
5. General: Continuous collection of data needed by FC and state borrowings to be allowed.

5th Finance Commission (1970)
Recommendations

1. Income Tax: States' share @ 75%.
2. Allocation Among States: IT and Excise Duty allocation should be done on basis of population (90% weight) and revenue generated in the state (10% weight).
3. Excise Duties: They were growing in importance. 20% of excise duty collected from all commodities allocated to states. On some commodities like tobacco, sugar, the allocation wold be 100%.

6th Finance Commission (1975)
Recommendations

1. Income Tax: States' share @ 80%.
2. Allocation Among States: IT and Excise Duty allocation should be done on basis of population (90% weight) and revenue generated in the state (10% weight).
3. Excise Duties: They were growing in importance. 20% of excise duty collected from all commodities allocated to states. On some commodities like tobacco, sugar, the allocation wold be 100%.
4. It was asked, for the first time, to go in the debt position of states and their non-plan capital gap.

8th Finance Commission (1984)

1. It was the first commission whose report was rejected as Art 281 nowhere mentions its recommendations are binding on president.

12th Finance Commission

1. It initiated a debt relief facility scheme where states would be given debt relief subject to enactment of fiscal responsibility legislations.
2. 11th and 12th finance commissions recommended States' shares in net Central taxes at 29.5% and 30.5% but actual tax devolution was 26.5% and 26% of gross tax revenue in respective tenures. So overall states used to get ~2.5% of GDP through share in taxes and ~3% through grants.
3. It assigned a weight of 25% to population, 50% to per capita income distance, 10% to area and 7.5% each to tax effort and fiscal discipline.

Table 4.7: Gross Tax Revenue, Cesses and Surcharges

Finance Commission	Gross Tax Revenue of the Centre	Cesses and Surcharges	Cesses, and Surcharges as Percent of Gross Tax Revenue of the Centre	Actual Tax Devolution (Rs. crore)	Actual Tax Devolution as Per cent of Gross Tax Revenue of the Centre
1	2	3	4	5	6
Eighth (1984-89)	167119	8225	4.92	42009	25.14
Ninth (1989-95)	419250	16642	3.97	112569	26.85
Tenth (1995-2000)	694756	21474	3.09	182925	26.33
Eleventh (2000-05)	1148007	68203	5.94	305013	26.57
2000-01	188705	7502	3.98	51688	27.39
2001-02	186327	6541	3.51	52842	28.36
2002-03	215905	13987	6.48	56122	25.99
2003-04	253668	15598	6.15	65766	25.93
2004-05	303402	24574	8.10	78595	25.90
Twelfth (2005-10)	2663337	301944	11.34	691056	25.95

Q. Critically assess the key recommendations of the 12th finance commission. (2009, II, 20)
13th Finance Commission

Recommendations

1. The share of states in the net proceeds of central taxes (excluding cesses) be increased to 32% from 30.5%.
2. Parameters for allocation are: Population (25% weight), Income distance from richest state replaced by "Fiscal Capacity Distance" (47.5%), Fiscal Discipline (17.5%) and Geographical area (10%).
3. It recommended that cesses / surcharges should be either brought in the sharing domain or be done away with.
4. The transfers through plan grants and CSS distort public finances and should be done away with in favor of formula based grants.
5. It suggests revenue deficit to be eliminated by 2014-15, total public debt to be limited to 68% of GDP by 2014-15 (45% center and 23% states) and better disclosure on debt position.

14th Finance Commission
TORs

1. Suggestions to amend the FRBMAs currently in force. Recommend incentives and disincentives for states for observing the obligations laid down in the FRBMAs.
2. Recommendations on expenditure and its monitoring for maintenance of capital assets
3. Review the state of finances, deficit, and debt levels of the union and states and suggest measures for maintaining a stable and sustainable fiscal environment
4. Implications of GST on centre and states.
5. Review the present arrangements as regards financing of Disaster Management.

Fiscal Federalism

Concept

1. It means assigning functions to different levels of government and assigning revenues to them as well to carry out such functions.
2. Centre must provide goods and services which are consumed by people of nation at large like railways, defence. States must provide those which are consumed within the state and are unique to the needs of the state.
3. But with time, the distinction between local and national consumption is blurring as economy becomes more and more linked. A factory located in Nagaland may cater to markets in Bengal uses roads for such operations.
4. Between grants in aid and tax devolution, grants in aid are considered better because they are targeted. But tax devolution is more rule based, hence certain. Grants may be arbitrary specially when the FC is appointed by centre.

States Fiscal Statistics

1. Revenue receipts of states: 12.4% of GDP. Borrowings: 3.2% of GDP. Devolvement of central taxes: 2.6% of GDP (this has come down from 3% since 2004-05).
2. State expenditures: 15.5%. Fiscal deficit: 2.2%. Revenue surplus: 0.2%.

Disadvantages

1. It can impede national level trade as different states impose different taxes on goods and services. Permits may be needed for commercial vehicles to travel across states leading to stoppages, corruption, wastage.
2. The body which decides allocation in India is FC which is appointed by Centre and reports to it. So it may be biased.

Indian Case

1. The revenue receipts of states are 12.4% of GDP while expenditures are 15.5% of GDP.
2. Traditionally finances were divided between centre and states. But with 73rd and 74th CA, local self governing bodies too get a share in the pie. Now the Finance Commission decides on distribution of revenues between centre and states. It also suggests measures to augment the resources of local bodies. It allocates based on cost disability, fiscal efficiency and needs of the states. These can be mutually conflicting as a state can be penalized for being able to collect more revenues like Maharastra was done and revenues may be allocated to UP and Bihar. For the NE states except Assam, all budgetary deficits are provided for by the centre.
3. Cost Disability: Nagaland has sparse population which is little and spread over a large area. The terrain is hilly so roads are difficult. Gujarat on the other hand is industrialized and has a concentrated population. So collecting taxes in Gujarat is easier than in Nagaland. So backward hilly states like Nagaland suffer from cost disability and must be compensated.
4. Fiscal Efficiency: Some states are efficient in fiscal matters and must be rewarded. But inefficiency may be a result of government's inefficiency or peculiarities of the state. So many states which are agri-dependent have very low tax base and hence fiscally inefficient compared to industrialized states. Different finance commissions have been confused so far on the criteria to determine these allocations. Some emphasize needs, some emphasize efficiency. So far no common policy has been evolved. Thus states have no incentive to keep their deficits in check.
5. Siloization of the economy: As different states impose different taxes on movement of goods and services thereby impeding trade and leading to corruption. Hence the need of GST.
6. Central Hegemony: Center's collection is ~ 9x that of states' in direct taxes. Center's collection is ~ 1.2x that of states' in indirect taxes. That is why states want more allocations. Over the years states' share has increased.
7. In India, the transfer of funds from centre to states takes place via FC (1/3) and PC and central government allocations in various schemes. There is a lot of discretion in these.

Q. Critically examine the fiscal federal system as it operates in India presently. What improvements would you suggest? (2010, II, 30)

Center-State Relations
(a) Issues

1. Lack of coordination: States don't allocated matching funds to CSS.
2. Market alignment of central lending: Earlier centre used to lend to states for 25-30 years on account of central plan assistance, now they are given a share of market borrowing @ market tenures (~10 years) and market costs. Similarly form the National Small Savings Fund the states have to borrow @ market rates only (~9.5%).
3. Cesses & surcharges: Cesses and surcharges are not to be shared with state so center has been increasingly collecting its revenue from cesses and surcharges. 11th and 12th finance commissions recommended States' shares in net Central taxes at 29.5% and 30.5% but actual tax devolution was 26.5% and 26% of gross tax revenue in respective tenures.

Table 4.7: Gross Tax Revenue, Cesses and Surcharges

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4.
5. Reducing GBS for state plans: The gross budgetary support from centre allocated to state plans has been declining progressively and is now only 23%. Total central assistance to states is ~ 5% of GDP (out of this ~3% is the share from revenues). As a result the size of state plan to central plan has come down from 66:33 to 40:60 now.

Table 4.4: Percentage Composition of Revenue Transfers from the Centre to States

Period	Finance Commission Transfers			Other Transfer			Total Transfers (4+7)	Transfers as a percentage of GDP
	Share in Central Taxes	Grants	Total Finance Commission	Plan Grants	Non-plan Grants	Total other Trnsfers (5+6)		
1	2	3	4	5	6	7	8	9
Eighth (1984-89)	53.48	6.65	60.13	35.80	4.07	39.87	100.00	4.83
Ninth (1989-95)	52.98	8.48	61.46	35.91	2.63	38.54	100.00	4.89
Tenth (1995-2000)	62.06	6.55	68.61	29.52	1.87	31.39	100.00	4.09
Eleventh (2000-2005)	58.38	11.00	69.38	28.65	1.97	30.62	100.00	4.16
Twelfth (2005-10)	56.48	11.55	68.03	28.55	3.43	31.97	100.00	5.21

Recommendations

a) Resource Sharing

1. The monetary limit on tax on professions should be revised.
2. Surcharge on income tax should not be levied by the Union Government except for a specific purpose and for a strictly limited period.

b) Expenditure Reforms

1. A comprehensive paper on subsidies covering both the Union and the State Governments be prepared by the Planning Commission every year.
2. The number of Centrally Sponsored Schemes (CSS) should be kept to the minimum. The need for the Union Government initiating pilot projects even in regard to subjects in the States' is recognized. But these should be formulated in prior consultation with the States. Once a programme has passed the pilot stage and has been accepted as desirable for implementation on a larger scale, it should appropriately form part of the State Plan. State Governments should be fully involved in determining the contents and coverage of the CSS so that local variations are taken care of.

c) Finance Commission and Planning Commission

1. The present division of responsibilities between the Finance Commission and the Planning Commission may continue but they must be made synchronous.
2. Information gathered by the Finance Commission should be published within six months of the publication of the report.
3. It will be a healthy practice if the observations and suggestions made by the Finance Commission on matters other than the ToR are also considered by the Government and placed in the parliament.
4. In its permanent ToRs should be the CSS and the burden on states therein.
5. State finance commissions should be made synchronous with the central finance commission. The allocations to PRIs should be made through states only and not via bypassing them.

Fiscal Imbalances

Concept

1. It is the mismatch between revenue raising capacity and expenditure needs. This is impossible to measure. A crude measure is based on actual revenues and expenditures. I = 1 - R/E. R = revenues of a state - grants in aid. E = total expenditure of a state. This tells the importance of grants in aid. In India, it was 0.51 in 1991
2. Vertical fiscal imbalance is between centre and states whereas horizontal are among different states. These are inter-related as centre can encroach upon revenue raising capacities of states as well as change the allocation of revenues among them.
3. Larger the horizontal imbalances, greater the need of central intervention and redistribution of revenues.

Impact of Economic Reforms

1. Reduced emphasis on central planning will place more burden on states and thus their expenditure will go up. At the same time, central government needs will reduce and it may give up more revenues. But at the balance, imbalance is likely to go up.
2. WTO membership and globalization has increased trade. The lowering of customs duties as a part of WTO obligations has also increased compliance. Hence central revenues have gone up which may be shared with the states.
3. Reforms have also increased regional disparities due to deregulation and foreign investment. So revenue raising capacities of a few states are likely to go up and increase horizontal imbalance.

Local Self Government Bodies

1. In order to determine allocation among LSG bodies, FC considers 3 things - (a) Population, (b) Geographical area, (c) Index of deprivation.
2. Index of Deprivation: It consists of proportion of SC / ST population and status of utilization of the previous funds.

SEZ

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Master Plan Township Small Plots

FAQ

1. Do tax benefits available to SEZ units have a sunset clause / specific timeframe?

All the input taxes i.e. Excise, Import duty, CST, Minimum Alternate Tax (MAT), Work Contract Tax, Service Tax, VAT (on inputs for manufacturing for export purposes) etc. are forever exempted in a SEZ. However, the Income Tax is exempted for a period of 15 years i.e. 100% of export profit is exempted from Income Tax for the first 5 years from the date of first exports. For the next 5 year, 50% of export profit is exempt. For the last 5 years, 50% of the ploughed back export profit is exempt from Income Tax. Above benefits are available subject to attainment of positive Net Foreign Exchange (NFE) earning in a block of 5 years from the date of commencement of operations.

2. Is NFE calculation a complex equation?

NFE is calculated on a simple formulae i.e. Exports (FOB value of all exports) - Imports (CIF value of all imports) > 0. In simple words, if a unit is bringing in 'X' amount foreign exchange i.e. exports and is buying 'Y' amount of foreign exchange from the Government and if X is > Y even by 1$, it has achieved a positive NFE.

3. Is SEZ similar to EOUs?

EOU is a scheme with an applicable sunset clause whereas SEZ is an Act. The SEZ Act has many advantages over the EOU scheme.

- Net Foreign Exchange earning as a percentage is not applicable. Only units have to be NFE (net foreign exchange) positive cumulatively at the end of 5 years.
- Predetermined value addition is not compulsory.
- No maturity restriction on external commercial borrowings
- Duty free material could be utilized in five years time instead of one year.
- Self certification is applicable for imports and exports.
- Mandatory period of 180 days for receipt of export proceeds has been extended to 360 days.
- As per Sunset Clause, EOU's may not be eligible for any Income tax benefit u/s 10B, for exports affected after 31/03/11.

4. Are supplies from Domestic Tariff Area (DTA) to SEZ Units considered as "deemed exports"?

Supplies from DTA to SEZ are treated as physical export. The DTA supplier would be entitled to:

- Drawback/DEPB
- CST Exemption
- Exemption from State Levies if provided through notification
- Discharge of Export Performance if any on the suppliers
- Income Tax benefit as applicable to physical export under section 80 HHC of the Income Tax Act.

5. Does a Unit situated in a SEZ has to fulfil a large number of obligations?

SEZ operations are much easier and only have to perform the following obligations:

- SEZ units have to achieve positive net foreign exchange earning in a block of five years i.e. Exports (FOB value of all exports) - Imports (CIF value of all imports) > 0. Please see Clause 53 of Chapter VI of the SEZ Rules, 2006 for a more detailed explanation
- The units have to execute a bond with the Development Commissioner and Specified Officer (Customs) for their operations in the SEZ
- The units have to maintain proper books of accounts
- Annual Performance Reports must be submitted to the Development Commissioner

6. is SEZ only Income Tax haven. It does not provide any other benefits to the Units?

Apart from a 15 year income tax holiday, following benefits are available to a Unit:

- Exemption from Excise and Customs Duties
- Exemption from Central Sales Tax / VAT (For input material used for manufacturing for export purposes)
- Exemption from Service Tax
- 100% FDI through automatic route
- Domestic Sales on payment of applicable duties by the buyer
- External commercial borrowings by units up to $ 500 million a year allowed without any maturity restrictions
- No requirement for Import License
- Freedom to bring in export proceeds without any time limit
- Flexibility to keep 100% of export proceeds in EEFC account
- On-site custom house
- Self-certification
- Warehouses/ICD

7. Are DTA exports faster than SEZ?

Due to procedural ease as provided in the scheme and the on-site Customs House, the turnaround time for imports and exports in a SEZ is shorter. Customs examination is to the bare minimum. SEZ units function on self certification basis. Also, loading and unloading costs are cheaper due to service tax exemptions. A SEZ allows the following operational benefits:

- In-house Customs Clearance
- Self-declaration for Imports & Exports
- In-house logistics & Warehousing Zone
- Exports can be made directly from the sub-contractor’s premises located anywhere
- No license required for imports
- Inter-SEZ units job-work and sale allowed
- Uninterrupted Electricity & Water supply

8. Being a deemed foreign territory, can SEZ Units opt for subcontracting part of its production / job-work.?

SEZ units can subcontract (with prior permission of the Specified Officer sought annually) to units in the SEZ/DTA which are registered with the excise department (if excise applicable otherwise to any other unit). The goods sent out for subcontracting have to be returned to the SEZ within 120 days from the date of removal or within a period as may be extended by the Special Officer in charge of this procedure.

Goods then can also be exported directly from the DTA unit provided it is registered with the Central Excise Department. This is allowed only by way of direct export and not through third parties. SEZ units can also do contract work for domestic companies, provided all raw material including semi-finished goods and consumables including fuel is supplied by the DTA exporter. In this case, the finished goods must be directly exported from the SEZ unit on behalf of the DTA exporter. The export document is jointly in the name of the DTA unit and the SEZ unit. The DTA exporter is eligible for refund of duty paid on the inputs by way of brand rate of duty drawback.

9. Routine examination of goods by customs in the EOU is common. Will the same practice continue at the SEZ?

Customs examination is to the bear minimum. SEZ units function on self certification basis. The meaning of Hassle Free Zone clearly originates from this concept. No Tax, No Duties, No Hurdles.

10. Can SEZ units operate both in the domestic tariff area (DTA) and SEZ area?

In-fact a company can set up units both in the SEZ and DTA, provided separate accounting procedures are maintained by the units.

The recent changes in Section 10AA of the Income Tax Act in the recently announced Union Budget allow a business to have the same unit in DTA as well as SEZ. The amendment was made to rectify an anomaly in the wording of the Section that adversely affected SEZ units. As per the Section 10AA, ‘export turnover of the unit’ is divided by the ‘total turnover of the assessee’ for calculation of exemption from income tax on export profit.

Now the total turnover of the “undertaking” i.e. unit located in the SEZ will be considered instead of total turnover of the business of the assesses.

The rectification of the anomaly will be a very big incentive for companies to move into the SEZs as they can keep the tax rebate earned on exports from SEZs separate from similar rebate earned from their units in DTA (or the area outside SEZs in the country where normal taxes and duties apply).

11. Can SEZ units sell to the domestic market?

SEZ units can sell goods and services, including rejects and scrap or other by-products of the manufacturing process in the domestic market on payment of applicable customs and excise duties. In-fact unlike EOU, where only upto 50% of FOB value of sales of preceding year can be sold in the DTA, there is no upper limit on DTA sales in a SEZ.

12. Should a unit immediately commence operations with full-fledged facilities.?

As per the SEZ Act, a Unit must be operational within a year from the date mentioned on the LoA (Letter of Approval). By citing relevant reasons, a further extension of 1 year is also available.

Also in order to be operational, it is not a must to have an upfront full-fledged facility. Operations can be commenced even from a pre-fabricated (e.g. Kirbi) factory and expansion can be done thereafter.

Unlike EoU, there is no minimum Capital expenditure limits imposed on the units in SEZ. A unit can start with minimum infrastructure to get going.

13. Is SEZ govern by multiple authorities.?

The Unit Approval Committee consists of representatives from State Government, Income Tax, Excise & Customs, DGFT etc. and is headed by the Development Commissioner. The DC appointed for the SEZ, therefore, is the nodal officer and is the superseding authority in all the matters related to a Unit situated in a SEZ.

The performance of the SEZ Units too is monitored by the Unit Approval Committee on annual basis.

14. Are banks reluctant to provide finance to a SEZ Unit?

The application for setting up a Unit in SEZ is scrutinized by the Unit Approval Committee consisting of representatives from State Government, Income Tax, Excise & Customs, DGFT. If the application is approved by the committee, Banks and Financial Institutions are more than willing to finance the Units as they consider the project to be viable and safe.

Also SEZ Act allows Units to opt for External Commercial Borrowings (ECBs) upto $500 million with cheaper interest rate without any maturity restrictions. Overseas Banking Units (OBUs) also offer term loans at London Inter Bank Offer Rate to the Units situated in a SEZ.

15. Exit route is not clearly defined in a SEZ

Through a recent notification (No. S.O.1293 (E) dated 20-05-2009), the Approval Committee has also been empowered to approve of change of the entrepreneur of an approved unit, if the incoming entrepreneur undertakes to take over the assets and liabilities of the existing Unit. In other words, a suitable exit route has been defined if a unit is not able to function.

If the SEZ unit is also operational in the DTA under the same name, the exit allows the outgoing unit to be operational in DTA under the previous name. The outgoing unit has to first surrender the LoA to the DC and then can bring a new unit. The new entrepreneur then will have to apply for a fresh unit approval and will also get a 15 year Income tax holiday.

16. Is part-shipment possible from a SEZ?

Part-shipment can be easily done from a SEZ. Cartons are sealed by the in-house customs and are then handed over to the Clearing & Handling Agent (CHA). The CHA then sends it to the designated port. If the seal is found in-tact, the carton is exported to the desired destination.

17. Can used capital goods be transferred from DTA to a SEZ Unit?

Units are now permitted to shift used capital goods into SEZ beyond the stipulated valuation limit of 20% by paying income tax. This move will be a big incentive for all the units coming into SEZs as they will now be able to shift expensive capital items, worth over 20 percent of total value of new capital goods installed in the SEZ unit (which is the current norm) provided they pay income tax on it.

This amendment will help SEZ units save a fortune by transferring capital goods as compared to purchasing new ones.

18. Are unit Approval process tedious and cumbersome?

Ministry of Commerce has issued instruction to all the Development Commissions to conduct the Unit Approval Committee Meeting within an interval of 15 days.

All approvals are given by the Unit Approval Committee headed by the Development Commissioner. Clearance from the Department of Policy and Promotion/Board of Approvals, wherever required will be obtained by the Development Commissioner, before the Letter of Intent is issued.

Approval Committee shall approve if:

- The proposal meets with the positive NFE earning requirement
- The proposal confirms availability of space, confirmed by the Developer in writing, by way of a provisional letter of allotment
- The applicant undertakes to fulfill the environmental and pollution control norms
- The applicant submits proof of residence, namely, passport or ration card or driving license or voter identity card or any other proof of the proprietor or the partners of partnership firms or Directors of the Company, as the case may be, to the satisfaction of Development Commissioner.
- The applicant submits the Income tax returns along with the annexure of the Proprietor or Partners, or in the case of a company, audited balance sheet for the last three years.

19. Is trading not allowed in a SEZ?

Trading activities (with zero value addition) are permitted in a SEZ. The profits earned on such trading activities are too exempted from Income Tax provided the goods are physically imported to the SEZ from outside India i.e. a foreign country for re-export. In case goods are procured from DTA and are exported, profits from such transactions are not subject to Income Tax exemption.

20. Are labour laws different in a SEZ?

Labour Laws in SEZ remains the same. SEZ is granted a Public Utility Status (PUS), it definitely is a no-strike zone, thus routine activities in SEZs are not hampered by labour unrest.

21. Is sale of Scrap allowed from a SEZ?

SEZ units can sell scrap to DTA units on payment of applicable duties depending on the tariff of the product.

sez vs nimz

1. no tax benefit in nimz.
2. only manufacturing.
3. large area 5000 ha nimz.

The proposed NIMZ area is situated in Kuhi and Umred Taluka of Nagpur district and has an area of 6280 hectares. It will attract investment of approx. Rs. 25,000 crores and will provide gainful direct and indirect employment to 2,60,000 people of the Nagpur district.

The first 7 Investment Regions under NIMZs were

• Ahmedabad-Dholera Investment Region, Gujarat (900 sq km)

- Shendra-Bidkin Industrial Park city near Aurangabad, Maharashtra (84 sq km)
- Manesar-Bawal Investment Region, Haryana (380 sq km)
- Khushkhera-Bhiwadi-Neemrana Investment Region, Rajasthan (150 sq km)
- Pithampur-Dhar-Mhow Investment Region, Madhya Pradesh (370 sq km)
- Dadri-Noida-Ghaziabad Investment Region, Uttar Pradesh (250 sq km) and
- Dighi Port Industrial Area, Maharashtra (230 sq km).

Later, Jodhpur-Pali Region was added to the list

Railways

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History
Situation @ Independence

1. ~20% of network went to Pakistan. Karachi which was the biggest railway hub was lost too.
2. Indian railways was reorganized into 8 zones.
3. Till 1960, IR made money but after that it began to lose financially due to inefficiencies and populism.

Planning & Railways
1st FYP

1. It focused on rehabilitation of railways.

2nd FYP

1. It focused in strengthen railways base by indigenous production of rails, locomotives, engines etc. Chitranjan and Perambur coach factories came up.

Economics

1. Railway's share in freight is 30% whereas its 50% in US and China. Passenger revenue (revenue per passenger per km) to freight revenue (revenue per tonne per km) ratio has declined from 0.30 to 0.27 since 2000 (it is expected to increase to 0.32 in 2012-13 in the budget). In rest of the world it is 0.85 and in Europe it is 1.30.
2. Railway's operating ratio is 95% (money spent to earn $100) while it was 76% in 2007-08.
3. Total revenues: $26 bio in 2012-13, $21 bio in 2011-12, $19 bio in 2010-11). Freight revenues: $18 bio in 2012-13, $14 bio in 2011-12, $12.5 bio in 2010-11, freight carried: 1025 MT in 2012-13, 970 MT in 2011-12. Passenger revenues: $7 bio in 2012-13, $5.5 bio in 2011-12, $5 bio in 2010-11. Total passengers carried: 8.75 bio in 2012-13, 8.3 bio in 2011-12.

Table 1: Item-wise Increase in Budgeted Revenue

Heads	2011-12 (Estimated)	2012-13 (Projected)	Increase	(in %)
	(Rs in crore)			
Passenger	28,800	36,073	7,273	25.25
Goods	68,620	89,339	20,719	30.19
Other coaching	2,750	2,994	244	8.87
Sundry	3,700	4,096	396	10.70
Total	1,03,870	1,32,502	28,632	25.34

1. 2012-13 (April-June): Total revenues: $6 bio, freight: $4 bio (245 MT carried) and passenger: $1.5 bio (2 bio carried).
2. Coal (450 MT) > iron ore (105 MT) + steel (35 MT) > cement (110 MT). Target for 2016-17 is 1.4 bio tonnes of freight (700 mm tonnes of coal and 200 mm tonnes of iron ore).

Table 2: Item-wise Increase in Budgeted Revenue

	2011-12				2012-13				Increase in			
	No of Passengers		Earnings (Rs)		No of Passengers		Earnings (Rs)		No of Passengers		Earnings (Rs)	
	Million	P/Km	Crore	P/Km	Million	P/Km	Crore	P/Km	Million	P/Km	Crore	P/Km (%)
Suburban passenger												
Upper class	254	9,180	266	0.29	270	9,818	279	0.28	16	638	13	-1.93
Lower class	4,105	1,34,151	1,719	0.13	5,459	1,43,474	1,974	0.14	1,354	9,323	255	7.37
Total	4,359	1,43,331	1,985	0.14	5,729	1,53,292	2,253	0.15	1,370	9,961	268	6.13
Non-sub passenger												
Upper class	91	61,074	6,698	1.10	95	63,880	8,103	1.27	4	2,806	1,405	15.66
Lower class	3,841	8,60,602	20,217	0.23	4,017	9,00,114	25,717	0.29	176	39,512	5,500	21.62
Total	3,932	9,21,676	26,915	0.29	4,112	9,63,994	33,820	0.35	180	42,318	6,905	20.14
Grand total – passenger	8,291	10,65,007	28,900	0.27	8,741	11,17,286	36,073	0.32	450	52,279	7,173	18.98

	2011-12				2012-13				Increase in			
	Originating Tonnes		Earnings (Rs)		Originating Tonnes		Earnings (Rs)		Originating Tonnes		Earnings (Rs)	
	Million	NTKM	Crore	TKM	Million	NTKM	Crore	TKM	Million	NTKM	Crore	TKM (%)
Goods												
Coal	454	265,965	27,867	1.05	485	284,438	38,168	1.34	31	18,473	10,301	28.07
Raw material for steel plant	15	10,877	1,172	1.08	15	11,361	1,566	1.38	0	484	394	27.93
Steel	34	33,751	3,957	1.17	37	36,050	5,379	1.49	3	2,299	1,422	27.27
Iron Ore	105	40,666	7,375	1.81	104	37,360	7,022	1.88	-1	-3,306	-353	3.64
Cement	109	61,495	6,558	1.07	118	67,496	9,039	1.34	9	6,001	2,481	25.58
Foodgrains	46	55,136	4,515	0.82	50	59,302	6,250	1.05	4	4,166	1,735	28.70
Fertiliser	50	43,818	3,970	0.91	52	45,552	5,198	1.14	2	1,734	1,228	25.95
POL	42	26,483	3,660	1.38	42	26,880	4,741	1.76	0	397	1,081	27.62
Container service	38	44,445	3,357	0.76	42	48,300	3,622	0.75	4	3,855	265	-0.72
Other goods	77	59,290	5,188	0.88	80	62,000	6,854	1.11	3	2,710	1,666	26.34
Misc goods			1,000				1,500		0		500	
Total	970	6,41,926	68,619	1.07	1,025	6,78,739	89,339	1.32	55	36,813	20,720	23.13

Modernization

CAG Report on Railway Safety

In this report, Audit had highlighted the need to evolve a unified overseeing arrangement which is absent as RPF, an armed force under the control of the Railways was mainly concerned with protection of railway properties. On the other hand the State Government is responsible for maintaining law and order. The security of passengers and passenger area was also entrusted to the Railway Protection Force in 2003 through an amendment. The main purpose behind the amendment of the RPF Act was to supplement the efforts of the state governments for ensuring security of passengers. The Report emphasised that the system of coordination that existed on paper between RPF and GRP (state government police) at the operating level and between the Railway Administration and state governments at headquarters level has been weak in implementation.

There is a distinct lack of security consciousness on the part of the Railway Administration, despite recommendations of the High Level Committee on Composite Security Plan. Adequate efforts have not been made to control access to railway stations and to decongest even sensitive high risk station,

Progress on installation of state of the art electronic surveillance system viz Door Frame Metal Detectors (DFMDs) and baggage scanners, has been slow and not up to international standards. Majority of trains were run without escort and in a number of cases the escort party was unarmed.

Crime against passengers has increased by 15 per cent during the last five years. Further, registration of crime committed on moving trains is plagued by number of problems. FIR forms were still not available with coach attendants, conductors and guards of several trains. Further, non registration of cases received from other State GRPs, general reluctance to take up investigations and considerable overlap of functions existing between the RPF and the State Government agencies handling Railway security has made it difficult to complete the legal formalities besides adding to victim's problems

Railway tracks are one of the most important Railway assets and their security is of prime importance for securing rail traffic. Security of tracks and bridges is the responsibility of State Governments. As a precautionary measure the Railway Administration carries out patrolling of track in sabotage prone areas. However, patrolling of track was being carried out sporadically on the basis of threat perception and availability of manpower. The State Police have been frequently unsuccessful in preventing large scale disruption to rail Security Management in Indian Railway traffic during the periods of agitation by specific groups like the Gujjar agitation and the recent Jat agitation.

In the context of enlarging dimensions of terrorist threat to IR's network, Security management on the IR requires a paradigm shift in attitude. No effort has been made to control access to stations. The unauthorised and/ or multiple entry /exit points on railway stations have not been closed. Thus, railway stations remain easily accessible to passengers and non-passengers alike.

A test check by audit revealed that a number of prestigious trains like the Mumbai Rajdhani etc. and even some trains passing through naxalite affected/dacoity prone areas were unescorted. Audit observed that even the escorted trains ran unprotected at several intervals.

5.1 Preparedness for Crisis Management

Crisis management is the process by which an organization deals with a major event that threatens to harm an organization or its stake holders. Crisis management in the context of the railways would focus on minimising the loss of life and reduction in disruption in the operation of the Railways.

Crisis /Disasters confronting the Indian Railways can be classified into four main types:

?? National level crisis which is specific to railways and is required to be managed with the help of other Ministries

?? National level crisis which affects the country including the railways and different ministries have to help each other viz Earthquake, Cyclone etc. The Ministry of Home Affairs will assist railways in security related crisis situation like sabotage, bomb blast etc.

?? Crisis situation which is not a national level crisis and is required to be managed with the help of other Ministries. Chemical explosions, fire in trains etc are covered under this type.

?? Crisis situation which is not a national level crisis and can be managed with the help of internal resources of the railways.

During any security related crisis, the railways may need the help of other agencies for their expertise. In these cases the instructions contained in the Railway accident manual /Disaster Management plan become applicable. The disaster management plan at the zonal level plays an important role and has to be dovetailed with the disaster management plan of the State Government and District Administration. In cases of sabotage the GRP and the State Police play an important role as they investigate the criminal cases relating to sabotage /explosion.

Kakodkar Committee on Railway Safety

Recommendations

1. Financial State: It recommended a one time hike of 25% and subsequent inflation indexation of fares. Introduction of new trains should be stopped if commensurate inputs are not provided.
2. Organizational Structure: Currently Railway Board formulates policy, implements them and also regulates them! There is conflict of interest and the function of regulation should be separated from the other two. For this a Railway Security Authority with sufficient powers should be created.
3. Operational Safety: Cab signaling and continuous track circuiting should be made available. Cost $4 bio in next 5 years. Manual crossings be replaced by over bridges @ $10 bio. SPVs should be setup for these projects.
4. Rolling Stock: Current coaches are slow and can't support long trains. So new LHB design coaches be employed.

Drawbacks

1. It is expensive. It asks for a budgetary support of $20 bio. Khanna Committee was appointed in 1997 and based on its recommendations of $4 bio, railway accidents have been brought down from 0.53 deaths pmkm to 0.17 now which was the target. Kakodkar Committee makes no effort to study how it was achieved.
2. Level crossing deaths in India are 145 per year. Is it worth it to invest $10 bio in it which amounts to $14 mm pa per death.
3. It makes no effort to envision a national railways policy.

Pitroda Committee on Modernization

1. Infrastructure: Modernization of tracks, railway bridges, elimination of manual crossings, dedicated freight corridors and high speed corridors.
2. Safety: Implementation of Automatic Block Signaling, GSM based mobile communication system.
3. Rolling Stock: Introduction of new engines, coaches, green toilets.
4. Development of PPP.
5. Total funding: $ 165 bio in next 5 years. Budgetary support: $50 bio, internal generation: $40 bio, borrowings: $20 bio, PPP: $45 bio.

LHB (Linke Holfmann Bush) Coaches

1. They are produced @ Kapurthala since 2000 and are designed for an operating speed up to 160 km/h and tested up to 180 km/h. They do not turn over if the train derails (anti-telescopic). They have an improved suspension system and better air conditioning.

Train Protection and Warning System

1. It automatically activates brakes on any train that has passed a signal at danger or is over speeding. It consists of an on-track transmitter placed close to the signal which is activated when the signal is at 'danger'. Any train that tries to pass the signal will have its emergency brakes activated.
2. If the train is travelling at speed, this may be too late to stop it before the point of collision, therefore a second transmitter may be placed on the approach to the signal that applies the brakes on trains going too quickly to stop at the signal. It has been approved for 3300 km in high density routes in India.

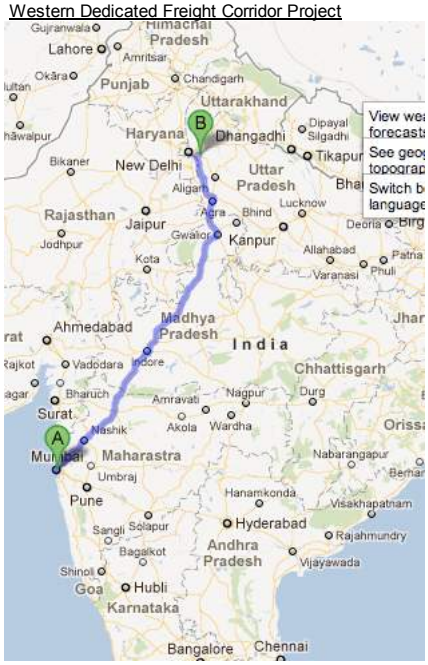
Cab Signaling
Continuous Track Circuit System
Anti Collision Device System

1. The ACD Network is a train collision prevention system by Konkan Railway. ACDs have knowledge embedded intelligence. They take inputs from GPS satellite system for position updates and network among themselves to take decisions for timely auto-application of brakes to prevent collisions.

High Speed Projects
Eastern Dedicated Freight Corridor Project

1. Its a 1800 km and will run from Ludhiana to Dankuni near Kolkata. It will be funded by World Bank.
2. The corridor enables higher freight carrying capacity and higher speeds 100 km per hour and also frees capacity for railways for the passenger services. This corridor will reduce GHG emissions.

Western Dedicated Freight Corridor Project



1. It is 1500 km and will run from Dadri in UP to Mumbai. Major funding will come from Japan.

Private Freight Terminals Scheme

1. The private developers will be allowed to develop and operate freight terminals of their own on their own lands.
2. The aim is to create additional infrastructure and increase railways market share in freight.
3. While improved financial performance will help, it is unlikely to be able to generate the massive resources needed for railway modernization. However, the quantum of private investment in the railways and railway related activities has an expansion potential. Private container train operators have already commenced operations and are competing with Concor. It is important to ensure that they are given a level playing field with Concor so that private investment in this area increases.

1. NE Link

1. Meghalaya will be connected to railways for the first time via Dudhnoi - Mendipathar project which is expected to be completed in 2012-13. It is a broad gauge project. Another line Lanaka - Sutunga is under the survey stage and will be used to carry minerals from Jaintia hills.

Roadways

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History
Pre-Independence

1. Roads was a provincial subject and provinces neglected it. So road development in India suffered. In 1927, a committee was setup which recommended that centre should give grants to the provinces for construction of roads.
2. In 1943, Nagpur Plan was conceived which called for (a) All villages in developed agricultural areas to have a main road within 5 miles. (b) All villages in undeveloped areas should be within 29 miles from main road. (c) All roads were classified as National Highway, State Highways, Major District Roads, Minor District Roads and Village Roads. (d) National Highway should be a central subject.

Post-Independence

1. After independence, the Nagpur plan was followed. In 1958, a new Road Plan was drafted. According to it - (a) In a developed agricultural region, every village must be within 1.5 miles of a road and 4 miles of a metaled road. (b) In an undeveloped region, every village must be within 3 miles of a road and 8 miles of a metaled road. After that road construction was taken up in 2001.
2. PradhanMantri Gram Sadak Yojna: Every habitation of >500 in plains and >250 in other areas must have an all weather road. In 2012-13, the budgetary allocation is $5 bio.
3. National Highway Development Programme: Many projects like Golden Quadrilateral, N-S E-W corridor, SARDP for NE were taken up. In 2010-11 5000 km projects were taken up, in 2011-12 7300 km projects and in 2012-13 9500 km projects will be taken up. $5 bio is allocated to MoRTH. ECB route has also been opened for building toll systems. Road construction in 2011-12 was 10.39 km per day out of which NHAI constructed 6.16 km per day. To meet a target of 7000 km per year, it is essential that 20,000 km are awarded and under construction.

Trans Arunachal Highway

1. It began in 11th FYP and the completion of this network in the North East, along with road connectivity to Myanmar and Bangladesh will help open up this route to mutually beneficial economic cooperation with ASEAN.

EPC Mode Construction - for 2 lane highways

1. A significant part of the existing NH consists of single-lane roads, which have suffered from a prolonged neglect. Their length is about 20,000 km, which could increase further during the Twelfth upgraded and augmented to two-lane standards. Since most of these roads have low density traffic, they may not be viable on PPP basis.
2. Experience also suggests that annuity based projects are comparatively expensive, while conventional contacts are prone to time and cost overruns.
3. The Ministry of Road Transport and Highways is, therefore, adopting the EPC (turnkey) mode of construction. A programme for upgradation of 20,000 km to two-lane standards for EPC basis is proposed.

Current Problems

The ministry of road transport and highways has proposed that the roads regulator have an adjudicatory role for contract dispute resolution, renegotiation of future contracts and enforcement of contractual obligations.

For issues related to renegotiation of existing contracts, tariff structuring and toll mechanisms, project entry and exit options and specific policy issues, the regulator is proposed to play an advisory role.

Toll-paying users under the current architecture do not get a fair voice. We should have a third party whom users can approach if they are not being provided with the services promised in the contract

Road Maintenance

1. Maintenance and Repair is a non-Plan expenditure. Traditionally there as been a gross under-allocation for maintenance (only 40% of demand is met).
2. The sub group on national highways said that the reasons for poor management of roads are twofold -(a) Under-allocation from the norms established in 2001 and (b) Enhanced allocations come to MoRTH in December which is too late.
3. The introduction of toll roads on a BOT basis has helped ensure maintenance. Maintenance of PMGSY is taken care of under contractual agreement. The contractors are required to maintain the roads for five years after completion. However, subsequently, the State Governments are expected to provide funding.

Land Acquisition
State Support Agreements (SSA)

1. These agreements are like MoU between the Central and the state governments to ensure the support of the state governments for the highway construction projects.
2. It creates an overarching legal framework to assure the project stakeholders to assure them of the state government cooperation.

Road Safety

Road Safety Fund - Sunder Committee

1. The sanctioned fund will be non-lapsable and constantly augmented with 50 per cent of the penalty amounts realized from violators of the Motor Vehicles Act. State governments can spend the money only on area-specific activities.

Road Safety Policy

1. During the 12th Five Year Plan, emphasis has been given for implementation of National Road Safety Policy on 6 Es (earlier 4 Es) i.e. education, enforcement, engineering (roads), engineering (vehicles), emergency care and enactment.
2. This includes setting up of state road safety councils and district road safety committees, setting up of road safety funds by pooling of 50% of the penalties realized by way of compounding of traffic offences, identifying and rectification of black spots on state highways and rural roads, setting up of more driving schools with private participation, inclusion of road safety curriculum in school syllabus.

National Electrical Mobility Mission Plan - 2020

Objectives

1. The NEMMP 2020 has set a target of 6-7 million units of new vehicle sales, along with resultant liquid fuel savings of 2.2 – 2.5 million tonnes to be achieved in 2020.
2. This will also result in substantial lowering of vehicular emissions and decrease in carbon di-oxide emissions by 1.3% to 1.5% in 2020 as compared to a status quo scenario.
3. The Government will provide the initial impetus through demand support measures, facilitate automotive R&D and put in place charging infrastructure. Government support will be ~ Rs. 13,000 crores.

Issues

1. *Electric two-wheelers are already popular. However, there is a need to look beyond cars and two-wheelers and introduce electric three-wheelers and buses (intra city public transport).*
2. *It is essential that a network of charging stations be developed for smooth operation of electric vehicles. Charging stations mainly require a parking spot.*
3. *Technology needs to be built up for high speed charging.*

Lassize Faire Theory & Critique

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Free Traders & Changing Character of £ Rule
Factors Responsible

1. Up until the end of 18th century, £ company was exporting Indian goods to £ and paying for them out of Indian revenues. This benefitted the company shareholders only.
2. By this time, industrial revolution had made significant headway in £ and it had become a manufacturing hub. A new class of manufacturer capitalists had emerged which gained nothing out of the policy of £ company. They stood to gain not by import of Indian products but by export of their own manufactured goods. They also wanted imports of raw materials from India to serve as inputs for their enhanced production.

Evolution

1. In 1769, an act was passed compelling £ company to export £ 380k of £ manufactured goods p.a. even if it suffered a loss on it.
2. In 1793, they forced the £ company to grant them use of 3000 tonnes of shipping p.a.
3. In 1812, a parliamentary committee was appointed to discover how £ manufacturers could replace Indian manufacturers and finally in 1813, £ company's monopoly was ended. Thus Indian economy became a colonized economy.

Impact
(a) Economic

1. To increase the market for £ goods and source of raw materials, £ followed a policy of free trade for £ exports into India and imposed stiff tariffs on Indian manufactured products. This led to complete ruin of Indian artisans. The ruin increased the pressure on land and it was only the strong joint family system which cushioned the impact.
2. India became an economic colony. Export of handicraft products plummeted while that of raw materials zoomed. Textiles which were chief item of exports for centuries were now imported.
3. This led to the development of improved means of communications like railways, roads, telegraph.
4. Indian industry couldn't develop due to biased trade policies, import duties on machinery and preference for foreign capital.

(b) Political

1. To increase further, they followed a policy of new territorial expansion. Thus Lord Hastings and Dalhousie greatly expanded the territory of £ India empire and the areas which produced raw materials or were lucrative markets were special targets.
2. It increased £ grip on India.

(c) Social

1. It was decided to westernize Indian education so as to create western taste in Indians so that they would be market for £ goods and its supports.
2. Christian missionary activities were to be supported for the Anglicization of Indian society.

Pre-Independence Industrialization of India
Debate #1 Deindustrialisation: Result of £ Policy or Indian Socio-Economic Structure
Morris D Morris recognizes the role of £ policy in lack of Indian industrialization, but he also cites other reasons.

1. India didn't have the market for mass goods. Per capital income was low and purchasing power was in the hands of only a few people.
2. Indian towns were pilgrimage / administrative centers. Manufacturing was dispersed into villages.
3. Indians avoided technology change. Exchange of knowledge was also very little. Indians didn't adopt iron casting even though it was introduced in € in 14th century.
4. Human capital was scarce in India along with physical capital. Unskilled labor only was plenty.
5. They accorded low social status to manufacturers. Manufacturing was strongly family based.

Early Patterns

1. Organized sector grew but remained only a fraction of total employment.
2. Dominant sectors were textiles, food processing and metallurgy.
3. Regional distribution was very lopsided. Bengal and Bombay were main centers.

Common Challenges

1. Price volatility after wars.
2. £ customs policy.
3. Fx appreciation.

Indian Economy @ Independence
Social Indicators

1. Education: Illiteracy was 85%.
2. Health: Mortality rate was 2.7%, infant mortality was 180, life expectancy was 32 years.
3. Level of urbanization: Only 15% population lived in urban areas.

Economic Indicators

1. Employment: 72% of labor force was engaged in agriculture (~27% were agriculture labor indicating pressure on land), industry employed 10% (organized industries only 2% and remaining 8% by SSIs), remaining 18% ion services.
2. Composition of national income: ~50% came from agriculture, 17% from industries (10% from SSIs and only 7% from modern manufacturing), 33% from services.

Agriculture

1. Declining productivity: Per capita production declined @ 0.72% p.a. between 1911 - 1941(Blyn). Per capita availability was only 400 g and even this was after the imports (10% of domestic production). The imports ate up 20% of our export earnings back then.
2. Shift to cash crops: Per capita food grain production declined by 1.14% p.a. between 1911 - 1941 while non food grain production increased by 0.57% p.a. in the same period. Food grain yields were down @ 0.44% p.a. while non food grain yields were up @ 1.15% p.a. The improvement in non food grains was not a result of any improved institutions or techniques but merely a shift of better land form food grains to cash crops.
3. Reasons: Zamindari system, usury, bonded labor, internal drain of capital (high LR with no investment back), high rate of tenancy (only 28% of rural households worked on their lands in 1951, rest was tenants, share croppers and labor) and poor technology (only 11% area used improved seeds, chemical fertilizers use was only 0.1 MT).

Industry

1. Deindustrialization: £ followed a systematic policy of deindustrializing India. Between 1815 to 1832 India's textiles exports dropped by 92% and in 1850 India was buying 25% of £ textiles exports. Even the benefits of railways went to £ as their positive externalities (in terms of backward linkages while construction and forward linkages while operation) went to £ as £ capital was used, £ coal and steel was used and £ used railways to export raw materials from India.
2. Modern industrial development: From 1850s modern industry began to develop in India but it was confined mainly to textiles (cotton and jute) and Bombay - Ahemdabad and Hooghly region. Iron and steel began to grow only after 1907 and others in 1930s. Still textiles comprised of 57% of total manufacturing output in 1951 (next being engineering @ 8.4% and steel @ 7.6%). Even though the pace of development was fast by 1951 it accounted only for 7.5% of the GDP (up from 3.8% in 1913). They employed only 2% of the labor force.
3. Absence of core sectors: A characteristic feature was under development of capital goods and modern banking and insurance sectors. India relied on imports to meet ~90% of its machinery needs in 1951.
4. Gradual indianization of capital: This happened specially during and after WW1 and Indian industries developed mainly in consumer goods sector and by WW2 India was mainly self sufficient in this sector. Some intermediate goods industries like cement and iron and steel were also in Indian hands. By independence, Indian capital controlled ~60% of the large industrial units.
5. Growing linkages: In 1930s, there began a shift of capital from usury, landlordism to industry. Links between industry and agriculture grew stronger. The new industries were mainly catering to home market instead of foreign market.
6. Public debt: India turned from a debtor nation to a creditor nation (from a debt of Rs. 450 cr to positive balances of Rs. 1700 cr) by the end of WW2 mainly on the account of forced savings enforced by £.

Q. Discuss the policy of discriminating protection and its impact on Indian industrial development during the £ period. (2011, II, 15)

Q. Compare and contrast the 'Swadesi' of 1905 and the 'Swadesi' promoted later by Mahatma Gandhi. (2010, II, 20)

Q. Gunder Frank held that development of one part of the world causes underdevelopment of another part. Does it explain industrialization of £ and the de-industrialization of India during the £ raj? Assess. (2010, II, 30)

Q. Is Gunder Frank's above view still valid in the contemporary world? Substantiate your answer. (2010, II, 20)

Q. What were the shortages faced by manufacturing sector in India at the dawn of independence? (2010, II, 10)

Q. Give a critical account of the underdevelopment of India during £ rule. (2007, II, 20)

Urban Development

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PURA

1. Physical connectivity in the form of road, transportation and power connectivity.
2. Electronic connectivity in the form of reliable telecom, internet and IT Services.
3. Knowledge connectivity in the form of good educational and training institutions.
4. Market connectivity that would enable farmers to get the best price for their produce.
5. Provision of drinking water supply and upgradation of existing health facilities.

PURA 2.0

1. Focus on 'census towns'.
2. Focus on PPP following an agreement between Gram Panchayats and the private parties.
3. "Census towns" fulfill three broad criteria like 5,000 population with a density of 400 people per square kilometre and where the male population engaged in non-agricultural employment activities is more than 75 per cent.

RAJIV AWAS YOJANA (RAY)

- The CCEA also gave its approval for the implementation of RAY during the mission period 2013-2022. A two step implementation process will be followed, beginning with the preparation of Slum-free City Plans of Action for the entire city/urban area, followed by the Detailed Project Reports for the selected slum areas.
- Under RAY, support will be offered to States and UTs and Central Government agencies for providing housing, including rental and transit housing, development and improvement of basic civic and social infrastructure and operation and maintenance of assets created under the scheme.
- Once States committed themselves to giving property rights to slum dwellers, they would be assisted by the Centre to draw up their Slum Free Plans of Action. Under the plan, the States would have to prepare a legislation for assignment of property rights as the first step.
- Besides, the States would have to identify the cities intended to be covered and their phasing. At the outset itself, States would have to commit themselves to a "whole city approach" so that an integrated and holistic plan was prepared to upgrade all existing slums – notified and non-notified – in each identified city.
- The stress would be on in situ redevelopment to keep dislocation of slum-dwellers to the bare minimum. The relocation of dwellers would be done only where it was absolutely unavoidable.
- Certain reforms in urban governance have been proposed relating to simplifying processes and procedures for the creation of affordable housing stock, facilitating inclusive planning and providing security of tenure. Some of these are mandatory.
- A Credit Risk Guarantee Fund, operated by the National Housing Bank, has been created to give guarantees to lending agencies for loans to new Economically Weaker Section / Lower Income Group borrowers in urban areas seeking individual housing loans up to a certain amount.

RAJIV RINN YOJANA (RRY)

- Under the RRY, loans are offered to the economically weaker sections (EWS) on subsidised interest rates for a 15-year tenure for buying houses.
- With banks and housing finance companies agreeing to disburse more funds as loans under the subsidised loan scheme — the Rajiv Rinn Yojana (RRY) — the Housing and Urban Poverty Alleviation Ministry (HUPA) will soon write to States to determine their targets for the scheme's implementation.
- The revamped scheme will allow more funding for the purchase of houses in the lower-income category.
- The scheme will offer an interest subsidy for a maximum amount of Rs. 5 lakh for an EWS individual for a house spread over at least 21 square metres.

PARANJPE COMMITTEE

SIMPLIFYING BUILDING APPROVALS

- A maze of procedures, inconsistent processes and lack of transparency has made the system of building approvals inefficient and corrupt. Many construction projects suffer inordinate delay and cost overruns because of this. It affects individual home builders and large promoters alike.
- Simplifying approvals without compromising the safety of a structure is a long overdue reform.
- The expert committee constituted by the Ministry of Housing and Urban Poverty Alleviation (MHUPA) has recently proposed three broad categories of reforms to streamline procedures and fast track construction approvals.
- The first set of recommendations concern procedures: government agencies have to lay down clear processes with firm time commitment; develop comprehensive building rules that would remove

cumbersome requirements such as obtaining multiple clearances; and reduce the burden on local bodies by permitting qualified personnel to self-certify building plans.

- The second set of reforms aims at setting up a single window system using information technology for screening building permission applications.
- The last category is about improving capacities in local bodies.
- A few cities in India have implemented IT-based automated building approval procedures, but these still do not function as true single window systems as related departments cannot share the information. An efficient one-stop solution is possible only when e-governance is fully integrated across different government agencies.
- The emphasis must be on removing various discretionary powers vested with the government. Such provisions not only operate outside the streamlined and automated processes but are also often misused.
- Self-certification and other recommendations would be meaningful and effective only when there is strong enforcement and zero tolerance of violations. Speedy approval is necessary, but so is organised development.

Urbanisation

Presently, India is at the cusp of rapid urbanisation and the extent of urbanisation is accelerating at a rapid pace. Census data 2011 reveals that about 31 per cent (377 million) of Indian population live in urban areas. The share of persons living in urban areas rose by 3.35 per cent in the decade 2001 to 2011 as against only 2.10 per cent in the decade 1991 to 2001

The process of urbanization in India is mostly characterized by dramatic increase in the number of large cities. In 1951, there were only five metropolitan cities (with population of over 1 million), i.e., Kolkata, Mumbai, Chennai, Hyderabad, and Delhi. Their number increased to 12 in 1981, 35 in 2001 and 53 in 2011 and is further expected to be about 68 in 2030.

At least two of them (Mumbai and Delhi) will be among the five largest cities in the world by 2030. In parallel many smaller towns are growing faster than mega cities and Tier 2 cities adding more private sector jobs than the metropolises, partly due to higher size of informal sector and lower real estate prices (Gupta, 2013)

can help solve land issues - The top 100 large cities in India produce 42 per cent of GDP with 16 per cent population and just 0.24 per cent of land area. In the coming decades, the urban sector will play a more critical role in the structural transformation of the Indian economy and in sustaining the high rates of economic growth.

The size of the municipal fiscal sector in India is very small, especially in relation to the public services these bodies are mandated to deliver and also as compared to many developing nations. The total municipal revenue in India accounts for about 0.75 per cent of the country's GDP as against a figure of 4.5 per cent for Poland, 5 per cent for Brazil and 6 per cent for South Africa. In terms of both revenue and expenditure, the ULBs account for only about two to three per cent of the combined revenue and expenditure of Central Government, State Governments and ULBs. This is in contrast to the situation in advanced countries where local bodies normally account for 20 to35 per cent of the total government expenditure.

the municipal bond market in India, albeit more than a decade and a half old, is still in a nascent stage. Bangalore Mahanagara Palike was the first ULB to have raised resources through private placement of municipal bonds in 1997 and Ahmadabad Municipal Corporation was the first to make a public offering in 1998. It was also the first municipal bond without a state government guarantee. Since 1997, only 28 municipal bond issues have taken place in India, which have included taxable and tax-free bonds and pooled financing issues, mobilizing funds to the tune of nearly ` 30 billion. Most of these have been private placements rather than public offers. A look at the trend in the value of municipal bond issues since 1997 suggests that the value of municipal bond issuances that were on a rise till 2005 has seen a sharp fall since then and there has been very few issuances since 2007 and practically no issue after 2010. The most preferred pattern has been tax free bonds (close to 50 per cent of municipal bonds, both in number as well as value), followed by taxable municipal bonds and, lastly, pooled finance bonds. The tenors of the issues have varied, being mostly in the range of five to 10 years; project-specific pooled issues have had a tenor of 15 years. The subscribers mainly include banks, corporations, individuals, companies, trusts, funds, associations, Financial Institutions (FIs) and non-resident Indians. Majority of the municipal bond issues have been used to fund water supply and sewerage projects followed by road works. This is possibly because user charges or tariffs in such infrastructure projects are easier to enforce and the amount and frequency of expected revenues can be predicted reasonably.

The size of the municipal bond market today is limited and distributed over a few strong municipalities of Ahmedabad, Nasik, Nagpur, etc. On the positive side, most of the municipal bonds issued so far were not backed by government guarantee proving that local governments can access the capital market to finance efficient delivery of civic services. It may be noted that despite urban local bodies having weak finances in India, none of the municipal bond issues have defaulted in repayment to date. Also, as part of the Jawaharlal Nehru National Urban Renewal Mission (JNNURM), Government of India has also taken initiatives to promote this route via assigning credit ratings on a regular basis for municipal corporations. Very few ULBs, however, appear to be planning for market borrowing as a source of finance for them.

he possible reasons are as follows:

(i) Even after having investment grade ratings, ULBs do not have easy and cheap access to finance as they are still considered to be riskier than the corporates with same rating. Development of municipal bond market is significantly linked to the financial position of states as most of the ULBs largely depend upon the devolution of resources and grants from the State governments. In case the financial position of States is not perceived to be sustainable, it may lead to unpredictability of transfers from State governments to ULBs and hence may impact outlook of financial position of ULBs. In other words, credit rating of an ULB to a large extent depends on the State's financial position.

(ii) The budgeting and accounting systems of ULBs still lack transparency, except in a few big ULBs. This leaves scope for misappropriation of assets and misleading picture of income and expenditure of ULBs. This also affects rating process of rating agencies.

(iii) Another key issue is liquidity of the secondary bond market to trade municipal bonds in India. An active secondary trading market is almost non-existent in India.

(iv) It has been observed from the experience of bond issuances by ULBs that due to poor project evaluation and lack of specialized project management support, ULBs have not been able to use the mobilised resources through bonds effectively. Some such municipalities include Ahmedabad and Nashik. These inadequacies, in terms of financial as well as physical planning, lead to high cost of capital for ULBs and, thus, losses arising out of interest payments.

(v) There is no specific statute which governs the insolvency aspect of ULBs like the corporates.

Pooled Finance

15. The idea behind pooled finance is that since small and medium ULBs are not able to access capital markets directly on the strength of their own balance sheets, and the cost of transactions also act as a barrier, pooled financing mechanisms can play an important role. These encourage, on the one hand, state governments and mid- to small-sized ULBs to pool their projects together to achieve a marketable size of the pooled bond issuance and, on the other hand, create a risk mitigated environment for the capital and financial markets at large. The success of the pooled finance model as demonstrated in the States of Tamil Nadu and Karnataka subsequently led the Government of India to create a central fund that enables capital investments to be pooled under one state borrowing umbrella in order to reap the benefits of economies of scale. Thus, the Pooled Finance Development Fund (PFDF) Scheme was set up by the Government of India's Ministry of Urban Development so as to enable ULBs to access market borrowings through state-level pooled mechanism

PPP in Urban Infrastructure

PPP in urban infrastructure has tremendous potential, particularly in sectors like water supply and sewerage, solid waste management and urban housing and transport. PPPs are essentially structured around a robust revenue model (

here are some challenges, which are generally highlighted, for the overall success of PPP in urban infrastructure in India. First, the commercial non-viability of projects that acts as a major deterrent to the entry of private firms. Very few projects are financially sustainable on the basis of user fee alone. Particularly in the field of water supply and sewerage, the low user charges make water supply and sewerage projects non-bankable given that such projects require general revenue support even for operations and maintenance. Second, the relatively smaller size/value of projects as compared with big infra projects in power, roads, telecom also makes some of these projects unattractive for private companies. Third, is the inability of ULBs to generate a strong internal revenue base. Very often private money is thought to be a substitute for weak local body finances.

Linkages with Jawaharlal Nehru National Urban Renewal Mission (JNNURM)

Jawaharlal Nehru National Urban Renewal Mission (JNNURM) is a massive city-modernisation scheme launched by the Government of India under the Ministry of Urban Development in 2005 for a seven-year period up to March 2012, later extended to March 2014. JNNURM envisages government funding to be used as an explicit catalyst for private investment in infrastructure. The funds for the programme are channelled through state-level agencies, where grants from the central and state governments are pooled and passed on as grants or soft loans to cities provided that they have prepared sustainable development strategies and the investments identified fit into these strategies. The share of grant funding by the central government varies from 35 per cent in the larger cities to up to 90 per cent in cities in the North-Eastern region. With the launch of the reform-driven and part-grant financed JNNURM scheme, both the macro-environment as well as project-level micro environment has become more and more congenial for PPPs in the urban sector. JNNURM has led to a significant step up in private investment in Indian urban sector through the PPP mode. To encourage more PPPs, it is, however, important to develop bankable or financially-sustainable models at a project level. After a project is started, there is a need to reduce delays in project implementation due to various regulatory approvals, land acquisition issues, etc. A frequently expressed criticism of JNNURM has been that the large numbers of projects were executed through parastatals. As a result, ULBs, which are the main institutions under the Constitution for participatory governance at ground level, have remained marginalised. Lack of participatory process has reduced the ownership of programmes by people. Against this backdrop, under the 12th Five Year Plan the government has come up with JNNURM-II that emphasises on People Public Private Partnerships (PPPP). Further, JNNURM II will be extended to all cities as against only "Mission city" approach of JNNURM-I.

Urban Infrastructure Financing Institutions

28. Financing institutions that cater to the needs of the urban infrastructure by extending term loans and investing in their issues include Government Institutions like Housing & Urban Development Corporation limited (HUDCO), Life Insurance Corporation of India (LIC), banks and other specialised infrastructure finance entities like India Infrastructure Finance Company Limited (IIFCL), Infrastructure development Finance company Ltd (IDFC), Infrastructure Leasing and Financial Services Ltd (IL&FS).

36. Currently, however, the scope for incremental financing by banks to infrastructure sector is limited. The single borrower and group borrower limits for banks in India are already high in

comparison to international standards, in view of the need for large financing needs of the infrastructure sector. Any further increase in exposure limits would lead to higher concentration and asset-liability mismatch risks for banks. Recognising this, the Reserve Bank has permitted banks to enter into takeout financing arrangement with IDFC/other FIs and has allowed refinancing through Infrastructure Debt Funds (IDFs).

37. There is also a demand from certain sections to grant Statutory Liquidity Ratio (SLR) status to urban infra-bonds

V. Challenges and Strategies in Financing Urban Infrastructure

Enhancing Own Resource Mobilisation Capacity

38. Without underplaying the important role that private sector can play in funding infrastructure, let me also highlight the general consensus that has developed in this regard that financing urban sector expenditures cannot be analysed independently of the ULBs own revenue position. A strong revenue position is required for the ULB not only for its own sake but also to attract private investment. This results in an improvement in 'municipal credit worthiness' and so far this has been a very important, rather most important factor, that has enabled municipalities to access the bond market and attract private investors. In many cases, ULBs have not been able to attract external finance mainly because of the precarious state of their own finances and poor governance. Cross country analysis also shows that a large part of the urban funding, (more than 80 per cent) comes from two main sources: (i) user charges and municipal taxes (such as, property tax) and (ii) intergovernmental transfers. Share of debt financing, public private partnerships and land monetization in total urban funding varies from just 6 per cent in New York to 13 per cent in London to 18 per cent in Shanghai6. It is against this backdrop that it becomes imperative that Indian ULBs enhance their resource mobilisation capacity in terms of taxes and other revenues that are already assigned to them.

39. For private investors to evince the interest in urban infrastructure and municipal bonds, it is necessary to enhance the ability of ULBs to have consistent revenues so that their bonds are seen as almost completely free from default risk. There is a particular need for focusing on maximization of revenues from property taxes and user charges. 'Users pay', 'beneficiaries pay' and 'polluters pay' are the cornerstones of local public finance as suggested by theory as well as practice7. They must be fully made use of through scientific ways of identifying tax base (Mohanty et al, 2007). It is desirable that services like water supply, which can be measured and for which beneficiaries can be identified without incurring a huge cost, are financed through user charges. One should not underestimate this source of revenue. In fact, experience shows that user charges could actually contribute to meeting the capital investment in a big way8. Under the JNNURM-I that had insisted on 100 per cent recovery of operation and maintenance (O&M) costs by way of user charge collections, while many could not reach that level, some municipalities in Tamil Nadu (viz., Porur, Tambaram and Madurai) have proved that cost recovery could be as high as 300 to 400 per cent, leading to recovery of the capital expenditure too, besides the O&M charges. Hence, it is necessary to try and improve user-charge collections to recover at least O&M expenditure on water, sewage, mass transit, and affordable housing.

40. Estimates suggest that India collects only an estimated 0.04 to 0.08 per cent of property values as property taxes—one of the lowest rates in the world. Some cities, including Bangalore and Delhi, have moved toward better assessment of property taxes. It is understood Ahmadabad and Hyderabad are also working towards it but there is still a long way to go before India can maximize its use of this type of revenue. It is, thus, necessary for all cities to try and exploit this source.

State Fiscal Position and Intergovernmental Transfers

41. Even though an urban local body based on its good fiscal credentials gets a good rating, it may not be able to attract private investors if the concerned state government's fiscal and financial position is perceived to be weak. Based on the model of Anglo-Saxon countries like the United Kingdom and Australia, the Indian urban public finance in India is also significantly dependent upon intergovernmental transfers. Most of the ULBs significantly depend upon the devolution of resources and grants from the State governments in addition to their 'own' and 'shared' revenues. This has two contradictory implications. First, in case the financial position of States is not sustainable, it may lead to unpredictability of transfers from State governments to ULBs and hence may impact outlook of financial position of ULBs. This is more so in the current framework when most of the states are committed to reducing fiscal deficit as per their Fiscal Responsibility Acts. Second, it is generally alleged that the present system of inter-governmental transfers to ULBs is ad hoc whereby transfers often bail out the incompetent and the irresponsible ULBs. In the kind of federal framework that we have in India, inter-governmental transfers will remain an integral part of solving the vertical imbalance in the assignment of responsibilities and fiscal powers between centre, state and local bodies. Hence, there is a need for establishing/strengthening and effective functioning of State Finance Commissions (SFCs) by all States and efforts should be made to have well laid down performance- linked transfers policies that are more objective, transparent and predictable so as to bridge the fiscal gap of ULBs without creating any kind of moral hazard. The Thirteenth Finance Commission (ThFC) has taken some steps in this regard by linking devolution of funds to implementation of reforms by ULBs9. A couple of states do qualify for such performance grants, but similar efforts by all states would be desirable.

Improving the Data Base for Urban Local Bodies

42. There is a need for a comprehensive and unified database on ULBs. This is a very crucial aspect. At present the reporting requirements for ULBs in India are weak. Experience so far shows that it takes a long time by the rating agencies to assign rating to ULBs mainly due to non-availability of systematic information on most of the parameters. Although a number of Municipal Corporations have made efforts to switch over to double entry accrual-based accounting system, progress seems to be more visible only in select States viz., Tamil Nadu, Andhra Pradesh and Karnataka. There is a need for standardisation of financial recording and reporting formats by ULBs so as to enhance the ability to consolidate ULBs accounts at State and at all India levels. The ThFC, in its report submitted in 2009, had noted that notwithstanding the fact that the Eleventh and Twelfth Finance Commissions underlined the need for maintaining a data base as well as up-to-date accounts of the local bodies and made a provision for supporting State governments in addressing these shortcomings, no credible data on the financial performance of the local bodies could be obtained. In view of this, the ThFC reiterated that the States should implement in all ULBs an accounting framework consistent with the accounting format and codification pattern suggested in the National Municipal Accounts Manual (NMAM) of the Ministry of Urban Development (MoUD)10. There is, thus, a need to devise and implement a uniform pattern of budgetary and accounting practices to enable improved compilation/reporting/dissemination of financial data relating to ULBs.

Developing the Domestic Debt Market

43. Municipal bond markets that were active till about 2005-06 have not shown much progress in past few years. There is a need for further deepening the bond markets and encouraging municipalities to tap these bond markets by creating project-specific SPVs. Greater disclosure standards and an effective dispute-resolution mechanism are required. The overall perception of municipal bonds being risky has to change. Experience shows that all those who have successfully accessed bond market have cashed in on their creditworthiness image. There is also a demand from certain circles to remove the fixed cap on tax free interest from municipal bonds as it does not respond to market conditions and makes municipal bonds unattractive at times depending upon prevailing interest rates. Hence, it is felt that tax laws concerning municipal bonds could be revisited once in two years.Given the long term nature of infrastructure financing which is beyond the normal 5-8 year loan tenors of commercial banks and the decreasing scope for incremental financing by banks, there is an argument to relax norms for pension/insurance/provident funds that can fill in some of the gap in debt financing in the infrastructure sector in general and urban infrastructure in particular. Combining term loans with bond refinancing could also increase overall financing and help reach financial closure.

Upscaling PPPs

44. Currently, PPPs constitute only a small part of the urban infrastructure investment. It is crucial that as in case of roads and airport sector, PPPs should become the default mode of undertaking projects in the urban sector as well. But for that one has to create commercially viable and bankable projects which are attractive to private sector. One has to encourage PPP mode through monetizable models, project specific SPVs, well-structured ?Requests for Proposals' and draft contracts ensuring a fair and balanced relationship with clear and realistic risk allocation. Only then serious contenders from the private sector will come forth.

45. It is a well-known fact that a large part of the infrastructure sector in India (especially irrigation, water supply, urban sanitation, and state road transport) is not amenable to commercialisation for various regulatory, political and legal constraints. Due to this, Government is not in a position to levy sufficient user charges on these services. The insufficiency of user charges on infrastructure projects negatively affect the servicing of the infrastructure loans. Generally, such loans are taken on a non-recourse basis and are highly dependent on cash flows. Hence, levy and collection of appropriate user charges becomes essential for financial viability of the projects.

46. Urban Infrastructure sector is today at the same stage where the road sector was about 15 years back. The strategies adopted and lessons drawn from the privatization process of the road sector should be put to use for successful privatization of urban infra projects11. As highlighted in the Report of Sub-committee on Financing Infrastructure in the 12th Plan (2012), there is a need for standardized project documents (bid and concession agreements) as in the case of road or power sector. Lender's interests are to be adequately and appropriately protected in the concession agreements like in the model concession agreement of transportation or power sector.

47. Also, one has to learn the lessons from the central/state level infra-projects, more than half of which are stuck due to various regulatory/administrative hurdles, land acquisition issues and environmental clearances. Consequently most of these projects have exhibited significant time and cost overruns making projects unviable. Effective governance is another key to the success of private investment. Today telecom and coal sector are examples of how lack of effective governance can bring them to a standstill. Of course, Government in the past few months have taken a lot of measures to address some of these issues. Urban sector is at an early stage of its journey of the PPP mode and we should be careful in creating the enabling environment for the private sector to operate effectively in this framework in which risks and rewards are shared in an optimal way.

Unlocking Land Value

48. Evidence suggests that land, especially in and around urban areas, can be tapped for generating resources for supporting sustainable urbanization. Sales revenues from MMRDA land auctions in Bandra-Kurla complex in January 2006 was a staggering `23 billion, which was two times more than the total infrastructure investment made by the Mumbai Municipal Corporation during 2004-05. The Report on Monetizing Land prepared for the ThFC12 has presented a case for financing urbanization using land based instruments. As per the study, about 15 per cent of ULB revenues have in the 10 years (1998-99 to 2007-08) come from the sale/lease of land by Development Authorities in the cities of Kolkata, Bangalore and Ahmedabad. Thus, there is a case for better tapping of some of the land based financing sources like conversion charges, betterment charges and development charges. Vacant land tax could be an important source of financing. While common internationally, especially in Latin America countries which levy about 3 per cent tax on the capital value of properties, vacant land tax is sparingly used in India. This instrument can also contribute to promoting housing if the tax rate on built-up land is lower than on vacant premises. A comprehensive registry of urban land at all levels of government is needed as a first step towards putting land based instruments to good use.

Potential Role of Micro-finance Institutions

49. Some Microfinance institutions (MFIs) in conjunction with NGOs have also played an important, albeit limited role in providing access to urban infrastructure, particularly for slum development, such as, SEWA in Gujarat. Local feel of the area, low cost of delivery and absence of bureaucratic processes are the unique selling propositions (USPs) of the MFIs. About 25 per cent of India's urban population live in slums and urban development cannot be carried out by neglecting slums. Recognising this, the potential with MFIs could be explored and exploited to ensure better service delivery, particularly in sectors like water supply and sanitation and home improvement lendings in urban areas through micro loans and supporting services. The reasons for the less popularity of MFIs in urban infrastructure space could be linked to their complex setting when compared with the rural areas; recent problems that have dented the credibility of the sector; lack of enthusiasm on the part of the public authorities and the political class to engage in the sector and the perception that the concept of MFI's has a rural origin.

Enhanced Scope for Multilateral/Bilateral Loans

50. Multilateral/bilateral assistance has been an important contributor to urban infrastructure financing, albeit at a lower scale so far. This could, however, become an significant source of debt financing. As per the 12th Plan estimates, about 8 per cent of the total projected urban transport infrastructure investment requirements have to come from multilateral/bilateral loans13. While on the one hand, such loans have the advantage of having lower interest rates compared to commercial loans, they generally have conditionalities attached to them. Also, these loans are seldom offered at the sub-sovereign level. Notwithstanding this, ULBs need to improve their credit worthiness and overall bargaining power so as to make some of the first steps towards accessing international finance at cheaper rates with suitable state/central government guarantees. They also have to put in place the mechanism to mitigate foreign exchange related risk.

Regulatory Framework for Municipal Defaults

51. The process whereby municipal default, or the threat of default, is handled in India is extremely opaque and there is almost no reliable or objective data concerning it. In the absence of any municipal bankruptcy process, any default is generally handled through a three-way negotiating process involving the borrowing municipality, the relevant state government, and the investor, with the state government playing a very significant role. The process is generally ad hoc, often strongly relationship-driven, and is usually affected by a range of political and commercial considerations (World Bank, 2011). Keeping this in mind, there is a need for a well laid down default resolution mechanism for municipalities so as to avoid moral hazard on the part of borrowers and attract private investors.

Best Practices and Innovations

52. There are many best practices and innovative experiments undertaken by some of the ULBs and State Governments in India in areas, such as, local resource mobilization, expenditure management, raising debt funds and in engaging private sector. Sometimes it is purely a local body initiative and sometimes at the behest of the State Government. The same needs to be discussed and disseminated widely. A national institutional set up on urban best practices and innovations by urban local bodies in the country and outside may also be developed. This Conference, ofcourse, is a constructive step towards this end.

Professional Management in ULBs

53. There are several studies that suggest that local bodies are not fully equipped to take up the responsibility of long term planning, especially of launching capital projects. A considerable expertise is required to identify the infrastructure projects appropriate for the development of urban areas and make a proper assessment of resources required. One of the biggest concerns for investors in ULBs arise from political risks. It is therefore necessary to put in place all possible measures to insulate project financing structures from political interference or decisions based on political and other external considerations. More than any credit guarantees, investors will value ensuring that such projects are insulated from politically populist interventions. Tariffs and other revenue streams from such projects need to be fully ring-fenced from the vagaries of politics. Given the weak institutional capacity of ULBs to monitor the implementation of such arrangements, it is also imperative that release of funds is followed by capacity building to monitor its implementation. Lateral induction from private sector and internship from reputed management/educational institutions in a structured and incentivized framework could greatly aid in professionalization of the ULBs, particularly in the areas of urban infrastructure management.

Jawaharlal Nehru National Urban Renewal Mission (JNNURM), 2005

1. Its chief aim was to develop housing for the slum dwellers. Rajiv Awas Yojna, Slum Dwellers Bill and Credit Risk Guarantee Fund are all part of JNNURM.

The Jawaharlal Nehru National Urban Renewal Mission (JNNURM) was launched in December 2005 with the objective of reforms-driven fast track development of cities across the country, with focus on efficiency in urban infrastructure, service delivery mechanism, community participation and accountability of ULBs / Parastatal[1] agencies towards citizens. It envisaged total investment of more than ₹ 1,00,000 crore, of which Central Government's share would be ₹ 50,000 crore. The Central Government's Share was revised to ₹ 66,084.65 crore in 2009. The mission period was for seven years (2005-2012). There were 65 cities identified as Mission Cities under the mission. JNNURM consisted of two sub-missions: the 'Urban Infrastructure and Governance (UIG)' (Sub-mission I) and the 'Basic Services to the Urban Poor' (BSUP) (Sub-mission II) for 65 identified mission cities. In respect of other cities and towns, there were two components namely (i) 'Urban Infrastructure Development Scheme for Small& Medium Towns (UIDSSMT)' and (ii) 'Integrated Housing and Slum Development Programme' (IHSDP).

Ministry of Urban Development (MoUD) is the nodal ministry for 'Urban Infrastructure and Governance (UIG)' and 'Urban Infrastructure Development Scheme for Small & Medium Towns (UIDSSMT)'. Urban infrastructure projects relating to water supply (including sanitation), sewerage, solid waste management, road network, urban transport, redevelopment of inner (old) city areas etc were executed under UIG and UIDSSMT. Ministry of Housing Urban Poverty Alleviation (MoHUPA) is the nodal ministry for 'Basic Services to the Urban Poor (BSUP)' and 'Integrated Housing and Slum Development Programme (IHSDP)'. These projects cover housing and slum development for providing shelter, basic services and other related civic amenities.

The time granted for completion of the projects, on an average, was around two years. However, out of 2815 projects approved up to 31 March 2011, only 253 projects (8.9 per cent) could be completed by 31 March 2011.

Structure for Project Implementation under JNNURM

Programme Management Units (PMUs) were to be established to assist the State Level Nodal Agency in discharging their roles and responsibilities of appraisal of projects submitted by ULBs/ Parastatal agencies, monitoring physical and financial progress of projects, monitoring implementation of reforms, to enhance capacity of SLNA by extending technical and advisory support etc. The PMUs were not even established in nine States/UTs. Regarding the functioning of the PMUs in the States/UTs where they had been set up, it was observed that they were not performing the multifarious functions assigned to them in their entirety. There were also vacancies in technical and other post(s) in States like Jharkhand, Uttarakhand and Odisha.

(Para 3.2.2)

Project Implementation Units (PIUs) were to be created as operative units to supplement and enhance the skill mix of the ULBs. In 10 States, the PIUs had not been established. These were Arunachal Pradesh, Bihar, Chandigarh, Delhi, Gujarat, Himachal Pradesh, Jammu and Kashmir, Odisha, Puducherry and Sikkim. Even where the PIUs were established, they were not working efficiently. There were vacancies in the PIUs.

Implementation of Reforms

States and the ULBs were required to initiate reforms in line with the 74th Constitutional Amendment Act 1992, in accordance with the guidelines of JNNURM and as per the tripartite Memorandum of Agreement (MoA) signed by GoI, State Government and the Urban Local bodies. The reforms were categorized as mandatory and optional reforms. Optional reforms were termed thus, as the cities under JNNURM were to have the freedom to opt for any two reforms from the optional category in each year of implementation.

MoUD was responsible for monitoring the status of all reforms. MoHUPA was also responsible for specifically monitoring three pro-poor[2] reforms.

City Development Plans and Detailed Project Reports

One of the objectives of JNNURM was the planned development of identified cities including peri-urban areas, outgrowths[3], urban corridors, so that urbanization takes place in a dispersed manner. Another objective was to have integrated development of infrastructural services in the cities. To achieve these objectives, a city development plan (CDP) was to be prepared by State/UT/ULB or

Parastatal for every identified mission city. The CDP was to be a comprehensive document for the planned urban perspective framework for a period of 20-25 years (with 5 yearly updates) within which projects were to be identified.

The next step was to prepare Detailed Project Reports (DPRs) for undertaking projects. During appraisal of projects at Central level, DPR was to be scrutinized together with CDP. It was also envisaged that owing to the importance of CDP, DPRs were not to be entertained without it. Thus the CDP and DPRs were required to be prepared before the city could access mission funds.

In the selected States/UTs, we observed that in some cases the DPRs of individual projects had no co-relation with the CDPs.

Out of 16.07 lakh dwelling units approved, only 4.18 lakh dwelling units (26 per cent) were completed by 31 March 2011. Out of the completed dwelling units, only 2.21 lakh dwelling units (53 per cent) were occupied.

A major reason for projects not being taken up at all and delays in progress was due to non-availability of land in time. In some cases land was made available only partly. In some States/UTs, it was also seen that the land identified was already occupied by others and therefore not available.

Financial Management

Funds under the mission were to be released as Additional Central Assistance (ACA) to the State Government or the designated SLNA. The State Government /SLNA were to pass on the ACA along with their matching share to implementing agencies.

The guidelines did not specify any timeframe within which releases were to be made after the project was approved. The scrutiny of physical and financial progress report (up to 31.03.2011) as seen from records of MoHUPA, revealed that there were delays in release of funds from the Central Government to the respective SLNAs.

We observed that the Revolving Fund, (meant to leverage market funds for financing of further investment in infrastructure projects in case of UIG/UIDSSMT and to be utilised for meeting Operations and Maintenance expenses of assets created in case of BSUP and IHSDP) had not been created by the SLNAs in 25 States/UTs. In three States (Andhra Pradesh, Tamil Nadu and West

immediately to the implementing agencies. The scrutiny of records of the projects selected revealed that, in several cases the funds were parked by SLNAs or ULBs.

Monitoring and Evaluation

As per the scheme guidelines, the MoUD and MoHUPA were to periodically monitor their respective components through designated officers of the Ministry for each State/UT.

We found that at the time of setting up the JNNURM directorate, no additional staff was created (as the staffing pattern was not worked out) and the staff in the directorate had been posted by way of internal adjustment in MoUD. We feel that the Ministry should have anticipated its role well in advance to handle a scheme of such magnitude.

For monitoring progress of projects sanctioned, it was stipulated that upon completion of the project, nodal agency through the State Government would submit completion report in this regard.

To keep track of the physical and financial progress of the projects throughout the project development life cycle (pre-construction, construction, commissioning and trial run and post construction), MoUD evolved a State level mechanism for third party monitoring and review of the project sanctioned under the JNNURM Sub Mission-I (UIG) by an Independent Review and Monitoring Agencies (IRMA) to be appointed by SLNA. Similarly, MoHUPA had also evolved such mechanism to appoint Third Party Inspection and Monitoring Agencies (TPIMA) for review and monitoring in respect of BSUP and IHSDP projects. Each project was supposed to be covered by an IRMA/TPIMA and ground level feedback is provided over the entire project development life cycle to all concerned stakeholders at the City, State and Central level.

party monitoring of the projects. MoUD could not intimate as to whether all the projects in these 27 States / UTs had been covered or not. MoUD checked only compliance of guidelines of toolkit regarding 'appointment of IRMA' at the time of appraising the proposal for the selection of IRMA and did not ensure compliance of other guidelines by periodical review of the reports. As such it did

What do we recommend?

- Government of India may consider giving suitable incentives to those States which are implementing the reforms as envisaged in JNNURM guidelines and MoA. Besides, capacity building in terms of finance and human resources may be enhanced so that the States may achieve the pending reforms within the extended period i.e. up to 31 March 2014.
- Efforts may be made to give wide publicity to such schemes through local newspaper and local cable network so that eligible beneficiaries get included in these housing projects.
- Government of India may strengthen the monitoring of the execution of projects so that there are no diversions to in-eligible beneficiaries / schemes.
- Government of India may monitor the delays and their causes more closely and due importance should be given to timely completion of projects.

Drawbacks in JNNURM Phase 1

1. The States were of the view that the projects could not be started because of cost escalation, land disputes and caste census.
2. The north eastern states were of the view that though under JNNURM the funding pattern was 90:10 (centre:state), the actual burden came out to be 60:40.

JNNURM Phase 2, 2011

1. This phase will focus on strengthening local municipal bodies and making them more professional and viable.
2. Use of e-governance initiatives and Citizen Charter will help improve public service delivery.
3. PPP is the way forward.

Rajiv Awas Yojana

Features

1. It looks to grant full property rights to slum-dwellers and for this purpose makes it mandatory for the states to enact state legislations.
2. Its guiding principle is in-situ development and no eviction unless a site is identified as "untenable" by the local authorities. If a site is found to be untenable, an alternative site must be found in consultation with the community and, as far as possible, within the same ward to minimise adverse effects on livelihoods.

Analysis

1. The large city bias: Small and medium towns have been excluded from JNNURM and RAY, despite there being clear evidence of a high incidence of poverty.
2. Problems in identifying ownership: Due to the absence of land records, non-transparent deals, and ownership conflicts, it is difficult at present to answer questions of ownership of slum land in several places. There is always the temptation is to shift slums away from prime city lands as they are a major source of revenue. So large scale eviction is possible in reality.
3. Low funding provision: The real challenge would be keeping the cost of a flat with 300 square feet to Rs 2,20,000 in large cities. This would necessitate making land available free of charge and heavy subsidies for material cost and interest payment. Unfortunately, no arrangements have been made for providing the required land and capital.

Credit Guarantee Fund Scheme under Rajiv Awas Yojna

1. The Union Government will provide guarantee for all collateral free house loans for up to Rs. 5 lac. 90% will be guaranteed up to Rs. 2 lac and 85% from Rs 2 to 5 lac.
2. A Credit Risk Guarantee Fund Trust (CGFT) has been setup for monitoring it. Currently only 25% of the housing loans are for < Rs. 5 lac and out of that only a fraction to EWS /

LIG.

Model Property Rights to Slum Dwellers Bill, 2011

1. Any person living in a slum as on 4 June 2009 shall be entitled to an affordable residential unit. He will get the legal title (the title will be given to the female or the male and female jointly). The residential unit will be non transferable but mortgageable. It shall be *in situ* as far as possible and until the person gets the residential unit, he shall be entitled to all basic civic amenities.
2. A Grievance Redressal Committee (GRC) shall be setup to settle disputes over slum dweller identification. Civil courts shall have no jurisdiction in its matters.
3. An Urban Area Slum Redevelopment Committee will be setup to implement the Act in each district i.e. identify slum dwellers, slums etc.

Real Estate (Regulation & Development) Bill, 2011

1. A Real Estate Regulatory Authority (RERA) will be setup in each state. It will keep an oversight over the sector and also act as first level dispute resolution authority. All builders/developers will have to register with the Authority and will have to make public certain details about the project like land status, clearance obtained etc.
2. Both developers and the consumers will have to stick to the schedule and project specifications otherwise pay fines with due interest. A part of the money received from consumers to be kept in a separate account meant for the project only.
3. A Real Estate Appellate Tribunal (REAT) to be setup to hear appeals against the Authority. Civil courts shall not have jurisdiction over its cases and it can also create benches.

Drawbacks

1. It covers projects only above 4,000 sq. m.
2. It doesn't prevent builders from constructing on the commons after project sale.

Central Legislation (Draft) for Street Vendors

1. Vendors to be protected from harassment by civil authorities and police.
2. Vending zones will be demarcated.
3. Vendors and women will have adequate representation in committees setup for oversight and implementation.
4. Quick grievance redressal mechanism will be established.

Three statutes from the Bill illustrate its spirit. One, it requires, ambitiously, every city municipal corporation to form a "Town Vending Committee" made up of the municipal commissioner and representatives of local planning authorities, resident welfare associations and street vendors themselves. Every person intending to become a vendor would have to apply to the committee for a certificate and a location.

The third stipulation in the bill worth emphasizing is the one requiring town plans to "ensure that the provision of space or area for street vending is reasonable and consistent with existing natural markets." This means that street vendors can't just be picked up and "relocated" to some distant zone

Second, the bill enjoins all city municipal corporations to undertake a survey of street vendors and to make room for them in a town plan, up to a number amounting to a maximum of 2.5% of the local population.

Census 2011 on slums

CENSUS: INDIA'S SLUM POPULATION IS 65 MILLION PEOPLE

- The census defines a slum as "residential areas where dwellings are unfit for human habitation" because they are dilapidated, cramped, poorly ventilated, unclean, or "any combination of these factors which are detrimental to the safety and health".
- Slums are differentiated in three ways: **notified, recognised and identified**. Two are designated as slums by some official authority, whereas identified slums do not have a legal status as a slum, but must consist of at least 60-70 tenements with at least 300 people.
- Identified slums have the largest subset of slum population, indicating that over a third of India's official slum population does not have official status and access to legal protection and municipal services.

Findings

1. The gap between slum and non-slum is narrowing. This may lead one to conclude that the conditions in which the urban poor live are improving.
2. There are far fewer slum households within cities than estimated earlier and also fewer towns and cities report having any slums at all.

Analysis

1. Do urban poor live only in slums?
    1. Census definition of slum: It goes beyond the 'notified' and 'recognized' slums and also takes into account the 'identified' slums.
        - *Notified Slums* declared as such under any statute including Slum Acts.
        - *Recognised Slums* that may not be notified under statutes but are acknowledged and categorised as slums by state or local authorities.
        - *Identified Slums* "of at least 300 residents or about 60-70 households of poorly built congested tenements, in unhygienic environment usually with inadequate infrastructure and lacking in proper sanitary and drinking water facilities".
    2. The NSSO and PC define the slum as cluster of 20 or more households.
    3. The slums below 60-70 household limit are likely be of the most vulnerable slums. This is because Indian cities, especially the metros, have seen a tremendous increase in cycles of eviction and displacement in the last decade. So the most vulnerable who are unable to find a livelihood in villages, come back and settle in these small slums.

SLUMS IN CENSUS

And, dwellings with roofs or walls of GI sheets were not counted as slum.

But strangely , while counting the slum population the Census did not consider these census towns at all. because they are still new settlements, a large number of slum dwellings is likely to be found in these census towns

Given the real estate boom and growing urban population, there is no space for huge Dharavi-like sprawls in our cities. Poorer people now settle down in whatever small space they find. So, the unit for our measurement should be 20 households ,

National Urban Livelihood Mission (NULM)
Urban Poverty Background

1. NULM has an open architecture so that it can be flexible and adaptable.
2. Cities currently contribute ~60% to the GDP. Still ~ 90 mm live in slums. ~92% of India's workforce was engaged in the informal economy. Therefore, skill development in unorganized sector is critical.
3. SJSRY is the only centrally sponsored scheme focusing on urban poverty. However, lack of funds, administrative structures and capacity led to its failure. MGNREGA cant be imposed in urban areas because urban poverty alleviation needs skill development and not unskilled labor.

Swarna Jayanti Shahari Rozgar Yojana (SJSRY)

1. SJSRY encourages setting up of self-employment ventures as well as wage employment. It creates suitable community structures like SHGs.
2. The revamped SJSRY has five major components - (a) Urban Self Employment, (b) Urban Women Self-help, (c) Skill Training, (d) Urban Wage Employment, (e) Urban Community Development. The above programmes are implemented in convergence with other programmes relating to slum development/urban poverty alleviation.

NULM Basic Approach

1. A vulnerability based approach is followed in NULM. Urban poor suffer from residential, social and occupational vulnerabilities. The residential vulnerability is reflected in the lack of access to shelter and basic services, social vulnerability is reflected in the form of social ghettoification, lack of social protection and voice in governance, and occupational vulnerability is reflected in poor informal occupations with no livelihood security.
2. The government is trying to address the residential vulnerability through JnNURM and Rajiv Awas Yojana (RAY). For social vulnerability, social security programmes are being worked out. NULM addresses occupational vulnerability.

Salient Features of NULM

1. NULM would focus on skill up-gradation, entrepreneurship development and credit availability.
2. NULM will have an open flexible architecture with strong IT base.
3. NULM will establish Service Centers or Aadhar Kendras which will act as “one-stop shop” for those seeking services relating to marketing promotion, skill development, employment and training.

5.4.3.4 *Solid Waste Management*

5.4.3.4.2 However, in spite of deployment of such a large workforce for solid waste management, the results are not satisfactory. In a typical city, the ‘public dust-bin’ approach is very common for garbage disposal. This approach has several drawbacks. Not all households and other commercial units put the garbage in the dustbins. Thus the garbage collection efficiency is very low, and whatever garbage gets collected is not segregated. This composite garbage is transported by municipal vehicles to the outskirts and on open ground. Very few municipal bodies adopt technically sound garbage disposal techniques.

5.4.3.4.3 The weaknesses of the existing system of solid waste management are: (i) the professional and managerial capacities of the municipal bodies are limited and this is more pronounced in case of smaller cities; (ii) no charges are levied for garbage collection or disposal, nor are there any incentives for reducing garbage generation or recycling waste;(iii) no separate costing is done for this function; (iv) indiscriminate use of plastic bags and goods; (v) recourse to modern technology is rare and; (vi) segregation of garbage at the source is not enforced.

5.4.3.4.4 The management of waste has three basic components: (a) collection (b) segregation for different types of disposal and (c) disposal. The first lends itself to community participation and also privatisation and must be made a part of the activities of Area Sabhas and local NGOs/CBOs who may charge for this.

The second component requires segregation into categories for different types of disposal. Unfortunately, our pattern of disposal is mainly one of indiscriminate dumping. It is essential to initiate a civic programme especially in the larger cities to segregate household waste according to its degradability.

This would ease the burden on civic authorities. The third component is that of efficient disposal, which can also be carried out either by the local bodies themselves or with private sector participation

5.4.3.5 *Scavenging*
Apart from the legislative framework provided by this Act, the Union Government has approached the problem with a two-pronged strategy: first, by providing an alternative to dry latrines by way of low cost sanitation units under the Integrated Low Cost Sanitation Scheme (ILCSS) which is in operation from 1980-81 and second, by providing training and rehabilitation in alternative occupations

5.4.3.6. *Power Utilities and Municipal Bodies*
5.4.3.6.1 Urban Local Bodies do not usually have a role in the supervision or operation of power utilities. Mumbai is an exception.

Local distribution utilities have several advantages:they can adapt to local conditions and problems with greater flexibility, the decision making authorities come closer to the consumers enabling citizens to have a sense of ownership of such utilities and giving them a greater sense of responsibility and, it becomes possible to achieve convergence with other civic amenities like water supply, street lighting, sanitation etc. An option could be to hand over distribution of power to the municipal bodies; however, with the existing organisational and technical capabilities of the municipal bodies, this may not be possible. Therefore, as a pre-requisite, the capacity of the municipal bodies needs to be enhanced, and then in a phased manner they could take over the function of power distribution, starting with small manageable areas within their jurisdiction.

5.4.3.6.3 Municipal bodies can also play a major role in proper planning of the distribution networks along with other networks like water supply and telecommunication

5.4.5. Urban Transport Management

The rapid increase in travel demand has been met (to a large extent) by increase in the number of vehicles. But the expansion of road space has not taken place at the same pace. Moreover, the growth in the number of vehicles has been rather skewed – with personalised vehicles inceasing at a much faster rate than public transport vehicles. This has led to traffic congestion in almost all major cities in India.

5.4.5.3 Some cities like Mumbai and Bengaluru have exclusive organisations for providing city bus services. In some cities, these services are directly run by the State’s road transport corporation. Only a few cities in Maharashtra and Gujarat have bus services run by the municipalities themselves

The State owned transport corporations have generally been running on deficits and have been unable to fund expansion in capacities to the desired level. The resource crunch has also prevented them from improving their quality of services. A large number of factors have been responsible for the rather unsatisfactory performance of the State owned public transport corporations – ad hoc fare policy, indiscipline amongst staff, managerial and operational inefficiencies, unscientific route planning, unsound personnel policies and political interference are some of them.

No well structured effort to involve the private sector in the provisioning of bus services is visible and small scale private operators continue to provide the bulk of the services in an undisciplined and unsafe environment in many cities.

5.4.5.5 *National Urban Transport Policy:* The Union Government has formulated a National Urban Transport Policy which seeks to redress to some extent the neglect of this sector. It has the following objectives:

Ø to bring about better integration of land use and transport planning so as to improve access to jobs, education, etc;

Ø to encourage public transport and non-motorised transport so that the dependence on personal motor vehicles is reduced;

Ø to offer Union Government support for investments in cycle tracks and pedestrian paths;

Ø to offer Union Government support for investments in mass transit systems;

Ø to have a more coordinated approach to urban transport management through Unified Metropolitan Transport Authorities;

Ø to offer support for capacity building at the State level;

Ø to design parking facilities in a manner that encourages greater use of public transport and non-motorised modes as also financial support for construction of parking complexes;

Ø to provide concessions for the adoption of cleaner fuel and vehicle technologies so that the pollution caused by motor vehicles gets reduced.

5.4.5.6 *Management of Transportation Demand:* In the past, the approach to solving the problem of congestion was to widen roads, build new roads, and construct flyovers etc – basically focussed on supply side management. Important as these measures are, unless they are complemented by demand management measures, congestion on roads would continue to grow. The use of personal vehicles needs to be discouraged by a judicious mix of fiscal and non fiscal measures. Singapore imposes an additional levy both on ownership of vehicles as well as use of vehicles. The Commission is of the view that in cities, a congestion levy may be imposed whenever a personalised vehicle enters a congested zone. Although there are implementation issues, proper use of IT can facilitate implementation.

Apart from congestion levy, measures such as allowing entry into congested areas only through public transport system, complete pedestrianisation of certain areas, facilitating movement of people through walking and cycling by providing the required infrastructure would all help in limiting the use of personal motorised modes of transport

5.4.5.7 Spatial planning is a major tool to contain travel demand. Interspersing small work areas and residential zones throughout the city rather than having work areas in one big zone far removed from the residential areas, planning high capacity transport corridors

5.4.5.8 Specific parking norms should be laid down in all CDPs/Master Plans with a long term perspective in order to take into account the increasing trend in the use of personal vehicles. The parking policy should also lay down norms for parking tariffs which should reflect the cost of land that is used for parking.

Thus, a single Authority, by whatever name or structure, must become the repository of all responsibility and authority within the municipal limits for all transportation related activities and decision making. The national policy talks of a Unified Metropolitan Transport Authority (UMTA) in metropolitan cities for coordinated planning of urban transport. But what is also required is a common ticketing and fare system for different modes of public transport and their integration so that they complement and not compete with one another. To make that happen, UMTAs will need powers to regulate all modes of transport, decide on routes for each operator, fix fares, service standards, etc.

5.5 Mega Cities

In First World and Third World countries alike, rapid urbanisation has led to a number of social and economic problems, including poverty, hunger, and homelessness, crime, and disease transmission. In addition, the resulting demand for land and resources has led to numerous environmental problems, including issues of pollution, sanitation, water, and energy.

5.5.1.2 The largest cities of India need to be provided a special administrative and legal status. In line with the principle of subsidiarity, there should be little reason why State Governments should continue to exercise control over most of the activities of Metropolitan Corporations.

5.5.2.1 The three largest cities of India are agglomerations each with more than ten million people. While the term “megacity” is generally used for cities of this magnitude, some of India’s cities below that size, such as Chennai, Bengaluru and Hyderabad, are themselves gigantic and are domestically and internationally of economic significance. Each of these large agglomerations could be considered a megacity, too large and bulky to be governed in the traditional manner.

5.5.2.3 Indian megacities are bustling metropolises but the quality of living in these cities continues to deteriorate. The recent incidents of flooding and waterlogging in Mumbai have highlighted its creaking infrastructure even as it is set to become the second most populous city in the world, after Mexico city, by the year 2020 (with an estimated population of 25 million).

There is constant influx of migrants into the city, taking the level of the informal sector to two thirds of the working population and putting further pressure on land and services.

Less than a quarter of the population have the physical and financial access to good housing, and the shortage of housing stock makes it one of the most expensive cities in the world.

5.5.2.5 The problems that impinge on these sprawling metropolises, in a generic sense, are:

i. Insecure and hesitant leadership resulting in lack of foresight and low quality of governance;

ii. The enormous size and population, which itself leads to complexities in governance;

iii. Shortage of resources to improve civic services;

iv. Traditional bureaucratic systems with general lack of professionalism;

v. The poverty and deprivation amongst a sizeable section of citizens and the continuing inability to solve shortages arising out of inward migration.

5.5.2.7 For India, it would be useful to define all cities with a recognised metropolitan area and a population of five million as a megacity - in the context of this Report as a Metropolitan Corporation - and plan for its future with a long term perspective of at least 30 years.

For all these cities, the Master Plan would need to be prepared as a preconceived and predetermined path for development. Spatial planning should use high resolution remote sensing and 3D visualisation of surface and subsurface with modern simulation techniques to achieve the goal of sound planning and land use management.

5.5.2.8 *Redevelopment of the Existing Cities:* For land developers, the ease of acquiring land in areas outside city limits, the lower costs, and the economies of scale that can result from large residential and commercial complexes in greenfield areas, all translate into huge profit margins. On the other hand, the cost of redeveloping inner city properties – brownfield redevelopment – is much higher. At the same time, for the city, ‘brownfields redevelopment’ 83 is a fiscally-sound way to bring investment back to neglected neighborhoods, cleanup the environment, reuse existing infrastructure that is already paid for, utilise existing markets and labour pools, and relieve development pressure on our urban fringes and farmlands. Consequently, there must be incentives to encourage better development in the cities, rather than in the distant suburbs. Public-Private Partnership projects for redevelopment of inner city areas **need to be encouraged**

JNURM involves a quantum jump in resource allocations to the urban sector and has for the first time explicitly linked funds flow to governance reforms in order to promote democratic decentralisation.

5.5.3.2 However, any such programme also has to be backed by a zero tolerance regulatory regime, one that enforces all civic laws, major and minor, in an impartial and unforgiving manner so that the present climate of impunity that prevails in our big cities can be brought to an end. The “Broken Windows” syndrome was referred to in the Commission’s Report on Public Order as an example of why law enforcement and civic regeneration must go hand in hand.

5.5.3.3 A zero tolerance strategy towards violations of civic laws will help to forestall the kind of widespread and blatant violations of building bye laws and land use norms that led to the Delhi demolitions.

local governance through professional, autonomous Authorities or Committees as detailed below:

1. Metropolitan Police Authority

2. Metropolitan Transportation Authority

3. Metropolitan Planning Committee

4. Metropolitan Environmental Authority

5.6 Urban Poverty

5.6.2 Beneficiary Identification

5.6.2.2 Various parameters are currently being used for identifying the beneficiaries for poverty alleviation schemes. Thus, the Swarna Jayanti Shahari Rozgar Yojana (SJSRY), the flagship scheme of the Government of India for addressing the problem of urban poverty through self-employment and wage employment, uses a complex seven criteria approach for beneficiary

identification.90 This requires assignment of points on account of (i) roof, (ii) floor, (iii) water, (iv) sanitation, (v) educational level, (vi) type of employment, and (vii) status of children in a house. The present scheme is funded by the Centre and the States on a 75:25 ratio and has two components: (a) The Urban Self Employment Programme, and (b) The Urban Wage Employment Programme. 5.6.3.2.4 Such schemes generally suffer from constraints such as low individual project ceilings (e.g. Rs. 50,000/- in case of SJSRY96) and less scope for innovative/special projects.97 Further, as the urban poor form part of the informal sector, they have difficulty in accessing finance through the formal system. Access to micro-finance, both through the formal system as well as through NGOs, can help in providing the much needed capital for the poor.

Commission feels that the parameters for identifying the beneficiaries should be such which could be ascertained in an objective and simple manner during a survey without any discretionary element

The identification should be based on a door-to-door survey and the survey teams should include at least one person from the concerned Area Sabha

running the poor out of town through evictions and discriminatory practices is not the answer. Helping the urban poor to integrate into the fabric of urban society is the only lasting solution to the growing urbanisation of poverty. The Report has brought out certain misconceptions– (i) rural-urban migrants are primarily responsible for urban poverty; (ii) the poor are a drain on the economy, and (iii) migrants would be better off remaining in rural area. In fact, attempts to control rural-urban migration not only infringe individual rights but also hold back overall development.

use a part of the land for profit as shown in Box 5.18 and as is being attempted in Dharavi.

5.6.3.5.11 The Commission has given due consideration to this complex issue and recommends that the following suggestions could be kept in view while preparing slum development policies or specific schemes:

a. All projects for slum redevelopment must be finalised only after sufficient disclosure and discussion with the slum dwellers and their representatives. This does not mean that all the demands of the residents must be accepted. The Commission is aware of the possibility of narrow or vested interests on “either side” and also that larger city issues of, say, environment management or traffic requirements must also be addressed. Nevertheless, the felt needs of the beneficiaries must be noted and no top down enforcement approach should be adopted.

b. The maximum possible floor area may be provided to the beneficiaries. This must take into account the needs of privacy in a joint or even a unitary family system. The area per dwelling unit can be maximised by vertical housing, with relaxation if necessary in existing FSI norms in the area for the sole purpose of retaining as much space as possible for other facilities and greenery. The present limit of four floors on slum/poor housing reconstruction also needs to be reviewed.

c. Only a small percentage of the land may be offered for profit based development and all needs of public spaces must be built into the scheme. The facilities to be provided should include total sanitation, adequate water supply, and depending on factors such as space, location, population and proximity to existing facilities; schools, crèches, libraries, dispensaries, cultural activities centres, transport shelters and relevant civic offices.

d. A small percentage of the cost of the dwelling unit can be met by the beneficiary. There are benefits of redevelopment and the costs attached to it which to some extent must be paid for by the slum dweller, if he wishes to use those benefits.

5.6.3.6 *Land Use Reservation for the Urban Poor*

5.6.3.6.1 Apart from the realignment and redevelopment of existing slums, it has to be expected that further migration and population increase could create more slums. To avoid this, and to improve the housing stock for the poor, it is necessary to earmark and reserve a certain percentage of land in each town and city for the urban poor. This must be a part of the spatial planning process and must apply to all private developers as well.

In the proposed National Urban Housing and Habitat Policy-2007, there is a provision to earmark at all levels, including the new Public/Private housing colonies a portion of land at affordable rates for housing for the Economically Weaker Sections and Low Income Group. This could be 10-15% land area to accommodate 20-25% dwelling units for Economically Weaker Sections and Low Income Group.

5.6.3.6.2 Shelter for Pavement Dwellers: Pavement dwellers are worse off than slum dwellers. And they are often lost sight of while planning housing for the poor. The Commission would not like to go into details, but parallel to housing for slum dwellers, a part of all programmes must include housing for pavement dwellers.

Telecommunications

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1. Total subscriber base of telecom in India is 950 mm. 65% urban, 35% rural.
2. Broadband subscriber base is 15 mm growing @ 15% p.a.

Current Issues
Competition

1. TRAI has proposed that it would prevent M&A only if the combined entity has a market share > 60%. Between 35 to 60%, it would merely review the deals.

License Fee

1. TRAI has proposed that a uniform license fee of 6% of revenue as against the current charge which is between 6 to 10% of the revenues. DoT has rejected this recommendation.

Spectrum Allocation

1. TRAI has proposed that spectrum will be delinked from the license and companies buying spectrum at market price can also share it further.

Government Initiatives
National Telecom Policy, 2012
Features

1. Increase rural tele-density to 70 by 2017 and 100 in 2020. Currently it is 39.
2. Broadband for all @ minimum speed of 2 Mbps. Also to achieve 175 mm broadband connections by 2017 and 600 mm by 2020.
3. Meet 80% of the equipment needs indigenously by 2020 by providing preferential market to domestic companies.
4. Eliminating circles - One Nation, One License, Free Roaming, Full Number Portability.
5. Delinking spectrum from license and give spectrum contracts at market prices. Any spectrum can be used for any technology and any service i.e. to make spectrum technology neutral. Currently 900 MHz and 1800 MHz are used for GSM while 700 MHz for CDMA.
6. To make the mobile phone a tool of empowerment by linking proof of identity and financial transaction services in a secure manner.
7. Creating a separate cell under TRAI to hear customer grievances and enable it to take effective action against the operators.
8. Hoarding of spectrum will be discouraged by charging a fee on unused spectrum as well. Currently fee is only charged on actual revenues. It is now proposed to be charged on potential revenues.

Impact

1. In the short-term, the NTP may impact telecom operators negatively as they would lose out on the roaming revenue. However, in the long run as usage would increase with no roaming charges.
2. He said the government's plan to make roadmap for availability of spectrum every 5 years would result in appropriate allocation of spectrum. It would help operators design their network/technology adoption keeping in view the availability of spectrum, he added.

Steps to increase rural tele-density

1. Completion of National Optical Fibre Network, providing broadband connectivity to villages and opening broadband kiosks.
2. Encourage sharing of physical infrastructure and development of low cost equipment and applications in regional languages.

Spectrum Re-farming

1. Spectrum re-farming is the process of re-deploying spectrum from available users and re-allocating it to others. It can be done in cases where spectrum is being underutilized and the most affected firms will be BSNL and MTNL. The NTP 2012 approves refarming of spectrum in 900 MHz (and give them spectrum in 1800 MHz band instead) when the licenses of the incumbents come up for renewal between 2014 and 2015.
2. In India, GSM technology works in the frequency band of 900 MHz and 1800 MHz while CDMA in the 800 MHz band. At present, 100 MHz is allocated for GSM services while 20 MHz is ear marked for CDMA. Out of this, 65 MHz is with the defence forces.
3. Spectrum re-farming has the capacity for enhancing coverage and wider availability of 3G and thus opening up newer revenue streams especially for mobile broadband. It can give better rural coverage and cost reduction in operations spread over long-term because of its low CAPEX ecosystem.
4. But at the same time if not done judiciously it can lead to heavy costs as some firms may already have made investments for the entire spectrum. They will get new spectrum in 1800 MHz for which they will need new equipment. Also incumbent telecom firms are averse to the idea as they will have to surrender "their" spectrum for which they may not get any compensation.
5. The most critical issue in refarming is that in a majority of circles army will have to vacate about 55 MHz in the 1800 MHz band.

What has irked them more is the TRAI's recommendations on "refarming" or reallocation of spectrum from the more efficient and powerful 900 megahertz (MHz) band to the 1,800 MHz band ostensibly to ensure that the most efficient spectrum is used to provide the most modern (mainly third generation or 3G and fourth generation or 4G) services including high-speed data transfer and mobile television.On 23 April, TRAI made a set of recommendations on refarming of spectrum in the 900 MHz band. This had supposedly become necessary following the impending expiry of the period for which licences had been granted some two decades ago. Those that are shouting the roof down include Airtel, Vodafone and Idea, all of whom will have to surrender prime spectrum following the expiry of their respective licence periods, while those keeping rather quiet include companies in the two Ambani groups and the Tata group, which are anticipating a leveling of the playing fi eld – for this segment of the industry, it is almost as if nothing of importance has happened. Telecom companies operating in the more efficient 900 MHz band will now vacate that space and be assigned an equivalent spectrum in the 1,800 MHz band at market-based prices upon expiry of their 20-year licences. The first batch of licences comes up for renewal in December 2014. It needs to be mentioned here that Reliance Communications has some 900 MHz spectrum but not in the important 22 telecom circles or geographical areas in the country. It has this spectrum in Assam, Bihar, Himachal Pradesh, Madhya Pradesh, the north-east, Orissa and West Bengal. The Tatas do not have any spectrum in the 900 z band.

Disadvantages of one india

1. wastage of spectrum as one company may not have operations in assam but it will be allocated spectrum in assam.
2. reshuffle of spectrum needed as airtel may have a band in up which vodafone may have in gujarat.

Disadvantages of delinking

1. How will we auction on a running basis?
2. what if one gets the license but not the spectrum. then fee paid for license goes waste.

Advantages of unified license

1. if a company has 2 g spectrum but wants to shift to 3g it currently has to reapply for 3g spectrum and its spectrum goes waste.

Viability Gap Funding Scheme

1. There are many projects with high economic returns, but the financial returns may not be adequate for a profit-seeking investor. For instance, a rural road connecting several villages to the nearby town. In such a situation, the project is unlikely to get private investment. In such cases, the government can pitch in and meet a portion of the cost, making the project viable. This method is known as viability gap funding.
2. This has been extended to telecommunications towers and fixed network to increase PPP.

2G Auction
Procedure

1. TRAI determines the quantum of spectrum to be auctioned, eligibility criteria for bidders, license caps etc. to ensure level playing field, base auction price ($700 mm per MHz), spectrum sharing and roaming rules etc. Then it submits recommendations to DoT. Currently it has recommended auctioning 10 MHz of spectrum in each circle i 8 blocks of 1.25 MHz each. There will be a topup of 3.75 MHz if a new player fails to win minimum 5 MHz.
2. DoT may accept them in part or whole and if any amendments are sought then it is referred back to TRAI. Then it issues a notice inviting applications.
3. Auction format is then designed and a software customized to prevent cartelization. Auction (40 days) is followed by declaration of results (1 day) followed by payments (11 days). Then letter of intents are issued (7 days) and then licenses (14 days) and finally spectrum.

Simultaneous Multiple Round Ascending Auction (SMRA)

1. This means that the service providers would bid for spectrum in different blocks simultaneously. In the first round of auction a reserve price (base price) set by the government is used.

Procedure for allocation of spectrum

1. TRAI has recommended that the reserve price should be 0.8 times the expected winning bid.
2. It has also recommended that telecom companies pay 67% to 75% of the final price in installments over 10 years, depending on the spectrum band.

Spectrum blocks and caps

1. TRAI has recommended that the spectrum cap should be determined on the basis of market share. A service provider can now secure a maximum of 50% of spectrum assigned in each band in each service area. However, a service provider cannot hold more than 25% of the total spectrum assigned in all the bands across the country.
2. Additional spectrum could be awarded to telecom companies when they reached incremental slabs of subscribers.
3. TRAI has recommended that spectrum should be auctioned in blocks of 1.25 MHz. Each auction would at least offer 5 MHz of spectrum at a time. Smaller blocks would ensure that service providers who are nearing the spectrum cap may secure spectrum without exceeding the cap. However, experts have argued that 1.25 MHz block may be too limited for launching services. Also, TRAI in the recommendation has noted that a minimum of 5 MHz of contiguous spectrum is required to launch efficient services with new technologies.

Aviation

Created: 10/21/2011 4:51 PM
Source: http://en.wikipedia.org/wiki/Directorate_General_of_Civil_Aviation_(India)#Civil_Aviation_Authority

Dharmadhikari Committee Report

1. New pay scales for employees of both AI and IA to be implemented with effect from 1 April 2007. Employees of both companies will be placed on uniform pay scale and common seniority. After fixing the common seniority, the frozen promotions can start.
2. Productivity linked incentive to be subsumed in basic pay to the extent admissible in the department of public enterprises guidelines and will be replaced by profit linked pay. Certain incentives need to be given to the pilots and cabin crew as per the industry standards. But they fall outside the DPE guidelines and will need approval from union cabinet. For the executive cadre recommended pay-scales are as per the DPE norms and non-executive cadre pay-scales are as per the industry norms.

Statistics

1. Air traffic has grown by 15-17% over last few years.

The Civil Aviation Authority of India Bill, 2013

▪ The Civil Aviation Authority of India Bill, 2013 was introduced in the Lok Sabha on August 20, 2013 by the Minister for Civil Aviation, Mr. Ajit Singh. The Bill proposes to establish Civil Aviation Authority of India (CAA), to replace the Directorate General of Civil Aviation (DGCA) as the civil aviation safety regulator, under overall oversight of the Ministry of Civil Aviation.

▪ According to the Statement of Objects and Reasons of the Bill, audits by the International Civil Aviation Organisation (ICAO) and the Federal Aviation Administration of the United States of America had pointed out shortcomings in the set-up and functioning of the DGCA. Some of the key issues highlighted were inadequate manpower and DGCA's lack of administrative and financial independence. Hence, the government has decided to establish the CAA as a separate statutory authority, granting it adequate administrative and financial flexibility.

▪ **Composition of CAA:** The CAA shall consist of a chairperson, a director-general and seven to nine other members, including at least five whole-time members. The director-general shall serve as the chief executive. The chairperson, director-general and other members shall have relevant technical or professional expertise. They will be appointed by the government for a term of five years, on the recommendations of a Selection Committee. The CAA may also create posts of officers and employees or engage external advisors, consultants or agents to discharge its functions.

▪ **Functions:** The CAA shall discharge all the duties currently assigned to the DGCA under the Aircraft Act, 1934. It shall be responsible for issuing licences, permits and approvals necessary for safety of airlines, airports, Air Traffic Controllers (ATCs) and other service providers. The CAA is also responsible for environmental regulation of airports, airlines and

other civil aviation activities, and protection of consumer interests. In addition, it shall coordinate and regulate use of Indian airspace by civil and military traffic, encourage indigenous design and manufacture of aircrafts and their components and facilitate training of civil aviation personnel.

▪ **Replacement of DGCA**: From the appointed day, all assets and liabilities related to the DGCA shall stand transferred to the CAA. All employees currently holding office under the DGCA shall be treated as being on deputation with the CAA, on the same terms and conditions for not less than three years.

▪ **Fees and Charges**: The CAA may collect fees and charges being collected by the DGCA under the Aircraft Act, 1934. It may also levy fees/charges for safety oversight and surveillance functions, and for use of its facilities by ATCs, passengers and airlines.

▪ **Civil Aviation Authority Fund:** All funds received by the CAA including central government grants, and fees and charges shall be credited to the Civil Aviation Authority Fund. The Fund shall be used to pay the salaries and met other expenses of CAA. Its accounts shall be audited by the Comptroller and Auditor-General of India.

▪ **Powers of CAA**: The CAA shall have the power to call for information, issue directions, conduct an inquiry and seize evidence relevant to an inquiry regarding any airline, ATC or other service provider. The matters entrusted to the CAA shall be outside the jurisdiction of civil courts. An appeal against its orders/directions can only be made to the government.

▪ **Offences and Penalties**: Failure to comply with any order or direction under the Act or made by the CAA can attract a fine of up to Rs 1 lakh in the first instance, up to Rs 2 lakhs in the second instance

and up to Rs 4,000 per day for a continuing contravention.

The CAA will have separate departments to deal with safety, economic regulation and grievance resolution, as well as a full-fledged environment department. It will also have an independent accident investigation bureau. The Authority will also have the autonomy to recruit staff. Currently, the DGCA is understaffed and does not have any recruitment powers. The CAA will have administrative and financial powers similar to those of the American FAA. These powers will redefine the regulator's role and better equip it to face the challenges of the growing Aviation sector in the country. Employees working with DGCA will be transferred to the CAA.[3]

The estimated cost of establishing the new Authority would be around Rs. 112 crore. The CAA would be self-financing and have a separate fund called the 'Civil Aviation Authority of India Fund' that would finance its entire expenses.

The CAA will be financially autonomous and financed from a separate fund—the Civil Aviation Authority of India Fund—but will also have the power to fix and collect fees to become self-fundin

CAA - Civil aviation authority

- The Union cabinet's decision to replace the Directorate General of Civil Aviation (DGCA) with a new regulatory authority that will have greater financial and operational autonomy was overdue.
- The proposed Civil Aviation Authority (CAA), to be established in accordance with standards laid down by the UN's International Civil Aviation Organisation (ICAO), is a step in the right direction.
- It has been evident for some time that the DGCA's limited powers had rendered it incapable of coaxing the structural changes demanded by India's civil aviation sector.
- Of late, India has also been faced with a threatened safety downgrade by international aviation agencies like the US's Federal Aviation Administration, even as the ICAO prepares to audit the DGCA's oversight record.
- The fake pilot licences scandal of 2011, which brought senior DGCA officials under the scanner for corruption, severely dented passengers' and global aviation authorities' confidence in it.
- But
  - Having said that, merely having a regulator in tune with international standards in place will not cure the civil aviation sector of its several ailments. For that, the focus must turn to the civil aviation ministry and its tendency to micro-manage the sector.
  - Despite posting a loss of Rs 10,000 crore for FY 2011-12, the crisis-hit sector continues to invite competition and investment.
  - **But the ministry** — has continued to interfere---->
    - by providing a sovereign guarantee to Air India's debts or bailing it out with taxpayers' money, as with
    - the Rs 30,000 crore package last year —
    - continues to interfere by, say, attaching riders to the number of aircraft private airlines can buy and thereby dictating which "small airports" they should serve.
    - The ministry sat tight on AI's right of first refusal till it was abolished last year and private carriers were given the signal to expand international operations, just as the government prevented foreign carriers from holding equity in Indian airlines till last September's reforms.
    - The ministry needs to step back.
    - That alone will allow a freer growth of the civil aviation sector, the safety of whose operations the proposed CAA will oversee

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Energy

Created: 10/30/2011 12:34 AM
Source: http://www.business-standard.com/article/economy-policy/coal-regulator-ambit-widened-113051900176_1.html?utm_source=feedly

Central Electricity Regulatory Commission

Challenges / Shortages

1. To sustain a growth rate of 9%, we need to increase electricity potential to 5-6x of current 200 GW and total energy by 3-4x by 2030. Current shortages are 15 GW (~ 10% of production). By 2030 country will need to import nearly 2/3 of its energy requirements. India's net imports of energy have gone up from 129 mtoe (million tonnes oil equivalent) to 227 mtoe now and is expected to be 366 mtoe by 2017. Our current energy elasticity is 0.8 and we expect it to be ~0.72 in 12th FYP.
2. Electricity: Per capita consumption of 1200 units by 2017 entails consumption of 1400 bio units overall. This would need installation of 75 GW of capacity in 12th Plan costing $275 bio ($125 bio in generation, $35 bio in transmission, $60 bio in distribution, $50 bio others).
3. Oil: 250 MT by end of 12th Plan vs current imports (for domestic use) of 105 MT. Domestic crude production is 40 MT.
4. Gas: 250 mscmd vs current shortage of 50 mscmd. Current production: 120 mscmd and imports 50 mscmd. India currently imports ~ 20% of its gas requirements which is expected go up to 30% by 2016-17 (demand: 475 mscmd).
5. Coal: 250 MT shortage by 2017 vs current 125 MT. Current demand is 650 MT vs production of 530 MT (CIL produced 435 MT). By 2017, demand will be 975 MT (725 MT needed by power sector, 70 MT of coking coal) vs domestic supply of 725 MT. CIL aims to produce 615 MT by 2016-17.

Current Situation

1. Total installed capacity: 200 GW. Coal: 55%, Oil & Gas: 10%. Hydro: 20%, other renewable: 12%. Nuclear: 2.5%.
2. Plant Load Factor for Indian plants is ~72%. International standards are 90%.
3. Gas consumption by power plants is 60 mscmd (they need 80 mscmd for 90% plant load factor). Out of this 60, only 3 mscmd gas is on long term contracts.
4. Indian coal prices are 25 - 30% of the world prices.
5. It is estimated the renewable energy (wind + small hydel + biomass) = 90 GW by 2032. Wind is 49 GW, small hydel is 15 GW, biomass is 25 GW.
6. India's refining sector is increasing at a tremendous rate and the refined petroleum exports have touched $60 bio. Current refining capacity is 200 MT and is expected to reach 300 MT by end of 12th Plan.
7. Per capita consumption of electricity in India is ~30% of global average and stood @ 800 units (580 kgoe) in 2010. World average is 1800 kgoe. National Power Policy, 2005 had a target of 1000 units by 2012 which wouldn't be achieved. Fresh target is 1250 units by 2017.

Oil & Gas

Kirit Parikh Committee report
The government had appointed an Expert Group on 'Viable and Sustainable System of Pricing of Petroleum Products'. This Committee, chaired by Shri Kirit S. Parikh, recently submitted its report. Key observations include:

▪ The reduced cash surplus of upstream public sector oil companies restricts their ability for exploration of domestic fields and acquisition of overseas assets. Keeping oil firms viable is in the interest of self-sufficiency in domestic oil production.

▪ Price control, subsidies and taxes can introduce distortions which may not be desirable. For example:

The higher excise duty on petrol compared to diesel encourages use of diesel cars

Lower diesel prices lessen the incentive to shift freight movement from trucks to railways, which consume 4 times less diesel for every tonne km of freight

▪ Control on pricing also restricts competition. Several oil marketing companies, viz. Reliance Industries, Essar Oil and Shell India, that were not part of the subsidy sharing arrangement, closed down their retail marketing businesses across the country.

▪ Petrol is largely an item of final consumption. Its price, therefore, has a very small impact on inflation due to forward linkages.

▪ Trucks accounted for 37% and buses 12% of total diesel consumption in 2008-09. Agriculture's share was 12%.

▪ The cost of diesel in agriculture can be accounted for by the Government while fixing the Minimum Support Price (MSP) for major crops and hence an increase should not adversely affect farmers.

▪ The inflationary impact of increase in diesel prices (due to increased costs in transport and industrial usage) would be comparable with the inflationary impact of subsidies.

Recommendations:

▪ Petrol and diesel prices should be market determined both at the refinery gate and at the retail level.

▪ An additional excise duty of Rs 80,000 should be levied on diesel cars.

▪ The price of PDS kerosene should be increased by at least Rs 6/litre. Thereafter, price of PDS kerosene should be raised every year in step with the growth in per capital agricultural GDP at nominal prices.

▪ Prices of domestic LPG should be increased by at least Rs 100 per cylinder. Thereafter, the price of domestic LPG should be periodically revised based the rising per capita income.

▪ The subsidy on domestic LPG should be discontinued for all others except the BPL households once an effective targeting system is in place.

7. PETROLEUM PRODUCT PRICING REFORMS

- The **Kirit Parikh Committee** recommendations on reforms in petroleum products pricing are well thought-out and forward-looking but their implementation would be a huge political challenge to the government.
- In view of high under recoveries on diesel the committee had recommended an immediate increase in retail price by Rs.5 a litre and a subsidy cap at Rs. 6 a litre.

Analysis

- Any widening of the gap between domestic and international prices beyond Rs. 6 should be made up with a corresponding increase in retail prices. Also the subsidy should be reduced over time with a regular increase in retail price.
- While the recommendation of a one-time hike in the price is prudent, it may be politically challenging to implement given the inflationary impact of diesel price hike.
- On PDS kerosene, the committee had recommended an immediate price hike of Rs.4 a litre and price revision from time to time at least in line with the growth in per capita agriculture GDP.
- With the direct benefit transfer (DBT) scheme to be fully implemented over the next two years, the price could be made comparable to diesel and Below the Poverty Line families could be compensated through the direct cash transfer mechanism.
- It recommended an immediate increase of Rs. 250 a cylinder for domestic LPG and that the balance subsidy be phased out over the next two years through gradual price increase; implementation of the DBT scheme throughout the country for transfer of subsidy to identified families; and reducing the number of subsidised cylinders from nine to six per family.

Drawbacks in NELP

1. Its profit sharing mechanism is based on investment multiplier i.e. the operator is allowed to recover a multiple of his investment. This induces the operators to show front loaded and inflated investment figures and a loss to the exchequer.
2. Out of 111 discoveries so far (40 oil and 71 gas) production has started only in 6 and India is producing 11,300 bpd of oil and 29 mscmd of gas.

Gas Pricing in India

1. There are broadly two pricing regimes for gas in the country-gas priced under Administered Pricing Mechanism and non-APM/free market gas. This could also be broadly divided into two categories, namely, imported Liquefied Natural Gas and domestically produced gas.
2. While the price of LNG imported under term contracts is governed by the Sale & Purchase Agreement between the LNG seller and the buyer, the spot cargoes are purchased on mutually agreeable commercial terms.
3. As regards domestic gas, its pricing is governed in terms of the Production Sharing Contract signed between the Government & the Contractor.

Government Initiatives

OIL n GAS POLICY

The government has decided to craft a "perfect" exploration licensing regime which will unify and simplify the policies for oil and gas, coal bed methane and shale, and end the current practice of "cost recovery" which is at the heart of the oil ministry's raging dispute with Reliance IndustriesBSE 0.20 %.

Companies that are awarded exploration blocks will have to share revenue from the first day of production, instead of the current system of recovering expenditure before sharing profits with the government.

articularly cost-recovery, which had led to allegations that companies overstated costs.

"It lacks the incentive to keep costs down for the operator; requires constant micro-monitoring by the government to protect the government's stake, leading to procedural delays and arbitrations.

welcomed the move to have a unified policy, which will give the winner rights to explore conventional oil and gas, shale gas, CBM, gas hydrates and any other forms of hydrocarbons in the block.

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In the proposed policy, the state's revenue share, which will be biddable, will be net of royalty.

Rangarajan Formula
One price would be derived from the volume-weighted net-back price to producers at the exporting country well-head for Indian imports for the trailing 12 months.

The other would be the volume-weighted price of US's Henry Hub, UK's NBP and Japan Custom Cleared (on net-back basis, since it is an importer) prices for the trailing 12 months.

1. NELP was launched in 1997-98 and has generated $15 bio of investment so far (in 9 rounds). ~90 blocks have been discovered but production has started only in 3.
2. Government has come up with gas pricing reforms.
3. An ambitious pipeline development program is in place where by 2014 additional 10,000 km of pipelines would be laid (current length 10,000 km) and by 2017 30,000 km of pipelines with a capacity of 875 mscmd will be in place.
4. Policies for shale gas and coal bed methane gas regulations have been prepared. CBM gas production is 4 mscmd currently.

Coal Bed Methane

1. It is a form of natural gas extracted from coal beds. United States, Canada, Australia have rich deposits. It is the methane adsorbed (when a solid holds molecules of gas as a thin film on its outer surface) into the coal. It is distinct from a typical sandstone or other conventional gas reservoir, as it is stored within the pores of a coal block via adsorption. It is in a near-liquid state, lining the inside of pores within the coal (called the matrix). The open fractures in the coal (called the cleats) can also contain free gas or can be saturated with water.
2. Unlike much natural gas from conventional reservoirs, it contains very little heavier hydrocarbons. It also contains some CO_2. It is called 'sweet gas' because of its lack of hydrogen sulfide. It presents a serious safety risk in underground coal mining operations.
3. Adsorption capacity: It is defined as the volume of gas adsorbed per unit mass of coal usually expressed in SCF (*standard cubic feet*, the volume at standard pressure and temperature conditions) gas / ton of coal. The capacity to adsorb depends on the rank and quality of coal.

4. Extraction: Coal bed methane wells often produce at lower gas rates than conventional reservoirs, typically peaking at near 8,500 m^3 per day, and can have large initial costs. The production profiles of CBM wells are typically characterized by a "negative decline" in which the gas production rate initially increases as the water is pumped off and gas begins to desorb and flow. The methane adsorbed into the solid coal matrix is released when the coal seam is depressurized. To economically retrieve reserves of methane, wells are drilled into the coal seam, the seam is dewatered, then the methane is extracted from the seam, compressed and piped to market. The goal is to decrease the water pressure by pumping water from the well. The decrease in pressure allows methane to desorb from the coal and flow as a gas up the well to the surface.

RII KG Basin Dispute

1. According to the amended initial field development plan (IDP), RIL was to dig and start production in 22 wells by 1 April 2011 (62 mscmd) and 31 wells by 1 April 2012 (80 mscmd). However till date it has dug only 18 wells and even among those only 12 are under operation (rest 6 are water logged). Production is down to 35 mscmd.

Move Away from Petro-Dollars

1. Iran and Russia settle their trade in Rouble.
2. India and Iran propose to do that in Rupee.
3. China and Qatar intend to do that in CNY now.

The Ethanol Binding Programme

1. In 2008, 5% ethanol mixing in petrol and diesel was made compulsory. In the National Policy on Biofuels, 2008, the government envisaged blending of biofuels in petrol and diesel up to 20% by 2017.
2. However, till date the oil marketing companies have achieved only 2% ethanol blending. The reasons for the failure are - (a) Ethanol is prepared from sugar cane and there is shortage of sugarcane in India. Even though production is 350 MT, it is estimated that for such a blending programme needed production is 550 MT. (b) The administered prices of ethanol in the blending programme are a hindrance as it fetches higher price in liquor industry. (c) Government efforts and policies are half hearted. Recently, Prime Minister's Economic Advisory Council has questioned the very rationale behind mandatory blending.

Recent Decision by CCEA on Ethanol Binding

1. The 5% mandatory ethanol blending as already decided in the past, should be implemented across the country.
2. Procurement price of ethanol will be decided henceforth between OMCs and suppliers of ethanol.
3. In case of any shortfall in domestic supply, the OMCs and chemical companies are free to import ethanol.

Jatropha

1. The initial hopes of the crop being resilient, needing less maintenance and resources and thus being profitable and pro poor turned out to be unfounded. It is not possible to raise a good crop on wasteland and in unirrigated conditions. The available varieties are low yielders and there is little post harvest management as well. Only a small fraction of the planned area has come under acreage so far. Moreover even official estimates indicate that to achieve a 20% blending jatropha acreage needs to be equivalent to wheat.

Shale Gas

- **Recommendations--**
  - The government should also consider the other important recommendation of the Rangarajan Committee — of moving to a revenue-sharing arrangement with gas producers. That will eliminate future disputes over cost recovery, even as it discourages gold-plating of project costs
- What is Gold plating of the projects??

At present, on the basis of the Rangarajan formula, the price for natural gas in India for the quarter April-June 2013 comes to $6.83 per mmBtu. As per the Rangarajan formula, the price will be fixed on the basis of average of net back price of Indian gas imports and also the weighted average of the price at international hubs. The underlying principle is that the Indian producer should get a similar price what the gas producers elsewhere are getting

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Shale Gas

For

1. Shale gas has gained widespread popularity in recent years following **technological advances that make it commercially viable.**
2. The most visible example is the US where shale gas production has shot up from 0.3 trillion cubic feet in 2000 to 9.6 trillion cubic feet in 2012.
3. Cost--
   1. Reduced---> **gas prices to around a fourth of previous levels and even cut wholesale electricity prices by more than half**
4. Availability
   1. The world's fourth largest consumer of oil and petroleum products, India imports as much as **three fourths of its oil requirements and around a third of its gas needs**.
   2. Large-scale shale oil and gas production would cut trade imbalances and the current account deficit, now causing the rupee to plummet. It would also reduce our dependence on Middle Eastern oil.
5. Initial estimates are encouraging.
   1. Technically recoverable shale oil resources are **3,800 million barrels while that of shale gas is 96 trillion cubic feet**.
   2. This is about two-third of India's current oil reserves and more than double its estimated natural gas reserves.
6. **Answer to critics**
   1. Though critics raise questions about the **environmental consequences** of the fracking technology used for producing shale gas, apprehensions are unwarranted given that shale gas use will bring down consumption of coal, which is the worst polluter.
   2. Moreover, improvements in fracking technology over the years will also reduce its environmental impact in the long run.

COUNTERVIEW

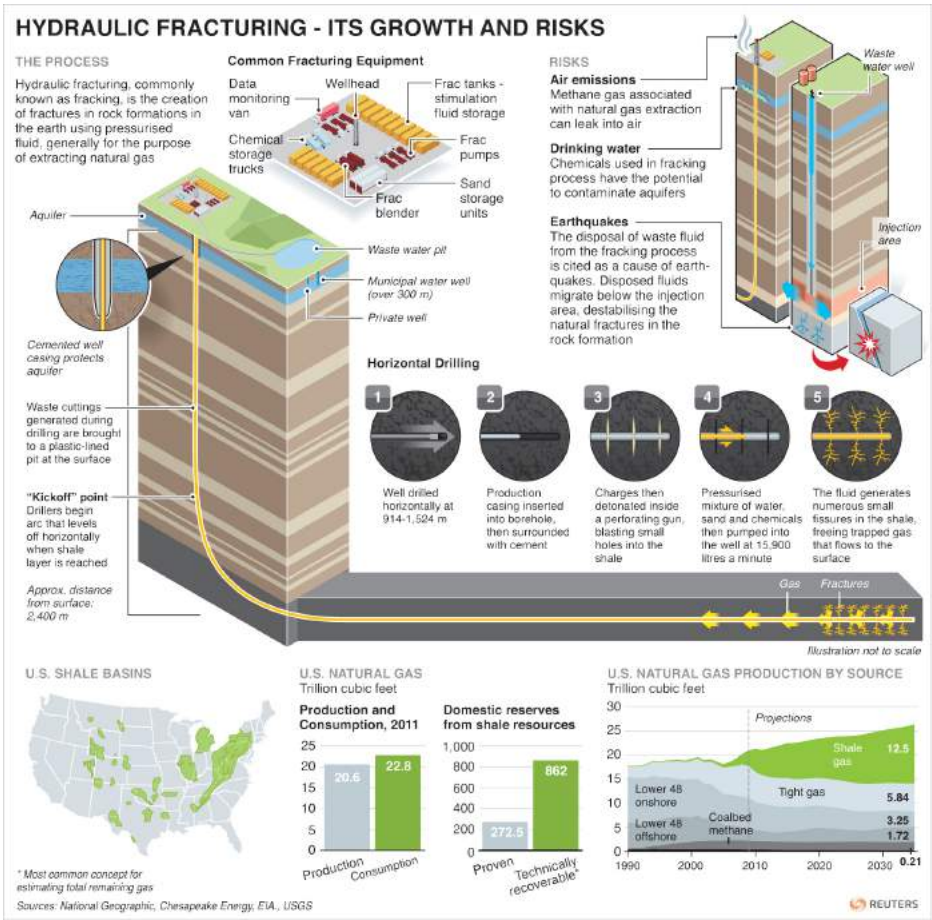
Environmental cost will be excessive

1. There is indeed more gas stuck in shale rock blocks in India than other forms of natural gas.
2. Some issues have been flagged by the environment ministry recently and cannot be ignored.
3. Polluting process (groundwater)
   1. Shale gas is extracted by pumping high quantities of toxic chemicals, including the **deadly hydrochloric acid and carcinogens, water and sand into dense shale rock formations to release gas that is then pumped to the surface**. **This is called fracking — or causing fractures in the rock formations**.
   2. It is a process that pollutes nearby environments when the poisonous mix of chemicals and carcinogens **seeps into the groundwater**. For a country notorious for the weak implementation of environmental laws, fracking can be extremely harmful.
4. Heavy use of water
   1. **A second problem is the heavy use of water in fracking and discharge of wastewater.**
   2. India can ill afford to use high levels of precious water that millions across the country thirst for.
   3. Clearly there are inescapable social and environmental costs which call into question the wisdom of exploiting shale gas.
5. Soil subsidence
   1. Drilling for shale gas has been blamed for soil subsidence in Britain and is banned in France and the Netherlands.
   2. Regulation and restriction on production are not good enough arguments because the human and environmental costs will be much too high to proceed with exploiting shale rock. There's no evidence that India has comprehensively explored and exploited its natural gas reserves from conventional fields. Why don't we try this first instead of going in for fancy and environmentally harmful technology?

1. Shale Gas is the gas trapped in the sedimentary shale rock formations. In India, its potential sites are in Cambay (Gujarat), Assam, KG Basin, Gondwana (in Central India), Cauveri and Indo Gangetic basins.
2. India has signed a MoU with US for shale gas exploration and development.
3. It will also be conducting first ever bids for shale gas exploration and development.

Issues in Shale Gas Exploration

1. It needs not only requires higher number of wells but also needs larger amount of land per well. Hence total land requirement is very high.
2. Uncertainties in extraction technology and hard nature of shale beds means only a portion of assessed reserves may eventually be recoverable.
3. It needs much more water.
4. Issue of water table contamination is there.
5. Issue of earthquakes is there.



Nuclear
Progress at NSG
India's Nuclear Liability Bill

Right to recourse

Under Section 17, the Act specifies three circumstances when the operator may seek recourse. Under Section 17(a), recourse may be sought when a contract in writing specifies such a right. Section 17(b) secures the right to recourse when a nuclear incident occurs due to a latent or patent defect in the product supplied. Section 17(c) allows the right to recourse when a nuclear incident has resulted from a deliberate action calculated to cause nuclear damage. The Act under Section 46 also allows claims under other laws, including torts. The Rules only relate to the right to recourse when specifically provided under a contract, i.e. under Section 17(a).

1. India decided to amend its Civilian Liabilities for Nuclear Damage Act (popularly called Nuclear Liability Bill). The modifications also cap the liability of the operator at $300 mm for unlimited period.
2. The operator can claim the min (damages paid by him, value of the supplier's contract) from the supplier.
3. The recourse period is max (period specified in the contract, period of initial license which is 5 years).
4. The operator can claim only what is directly paid by him as compensation to the victims whereas the cost of nuclear damage is much more.

Kundankulam Units 3-4

1. The intergovernmental deal between India and Russia (2008) said no retroactive application of domestic law would apply to the agreement — that was interpreted to mean that the liability law would not apply to Kudankulam 1 & 2 power plants. India absorbed the liability leaving Russia free. The Russian government has said the same deal should apply to KK-3 and 4 reactors.
2. The clause in the Kundankulam agreement was put there by India because of bad history. In the 1970s, the Pokhran tests triggered a round of sanctions against India by some countries. In 1978, the Carter government passed the NNPA, which unilaterally abrogated the Tarapur deal, causing a historic low in Indo-US ties. From then, the Indian stand was that international agreements should triumph over retroactive application of domestic law. This was maintained by New Delhi through the negotiations on the nuclear deal.
3. Therefore, when Russia insisted on the extension of the 2008 agreement on newer Kundankulam reactors, the department of atomic energy agreed. But this, as the PM has observed, is tantamount to giving Russia a special status, because it is believed to go against the principle of “universal application of law”. It could open the government to litigation from domestic suppliers who don’t enjoy such a waiver.

International Efforts

1. India proposed to US to create a joint group to address any further concerns of US.
2. France and Australia have come out in India's support as a result and Japan too is coming.
3. Australia - 3rd largest U exporter in the world - has also come out in support of exporting U to India.
4. Russia has offered to host the ENR technology on its soil and give the shares to India.

Fresh Obstacles

1. Many customs unions are emerging in some of the member states like the Eurasian Union, GCC Union etc. So there is a question that if one of the union member is also a member of NSG then do all the export restrictions automatically extend to the non NSG members of the union as well?
2. In 1990s Russia was cooperating with India in its civilian nuclear programme. In 1998 when US challenged this in NSG, Russia claimed that it was doing so under an agreement signed in 80s (when sanctions were not in place) and this is called grandfathering. Now China is doing the same in case of Pakistan.

India's Nuclear Agreements

1. France agreed to supply reactors, technology (excluding EnR) etc.
2. Russia will build reactors, transfer technology, supply fuel to these reactors etc.
3. Mongolia will supply Uranium to India.
4. Namibia will supply Uranium and encourage Indian investments in exploration sector in Namibia.
5. Argentina will do scientific, technical and commercial cooperation.
6. Canada will give technology and fuel
7. UK will give technology and equipment.
8. Kazhakstan will sell fuel, give joint mining rights and construct and operate reactors.
9. S Korea will participate in reactor construction programme in India.
10. Japan was the bottleneck since the container chamber is manufactured by Japan only. Now Japan will also likely cooperate. Post Fukishama incident, there were announcements in Germany, Japan, Switzerland and Taiwan regarding gradual phase out of nuclear power.

Coal

Some Reasons for Poor Performance

1. Of the 208 captive coal blocks allotted a production potential of 657 MT per annum, the estimated annual production by the end of the Eleventh Plan is only 37 MT. One reason is the inadequate incentives with the States to increase coal production.
2. The captive allocation policy provides that the new mines can't be located close to the CIL mines. This leads to allocations in very remote areas with no infrastructure and hence mining can't begin.
3. In many cases joint allocations of mines have been made which lead to conflicts in terms of grade requirement etc.
4. For unexplored blocks developers require prospecting license which takes 1 year or so. Then they need forestry license which takes another 1 - 1.5 years. Then for the development of mines an environmental clearance is needed for which no time period is specified and it takes 2 years. If the clearances are not obtained in time, the right holder risks forfeiture.
5. Land acquisition delays happen due to inadequate R&R policies. Also the approval for land acquisition itself takes 1 - 1.5 years.
6. Environmental factors: 'Go-No Go' policy (which completely bans coal mining in 'No Go' areas), rehabilitation and resettlement issues and also problems in land acquisition have played their part. In the Go - No Go policy as large coal bearing areas were suddenly declared 'No Go' areas, it severely limited the ability to expand domestic production of coal. Comprehensive Environmental Pollution Index (CEPI) norms also prohibit mining in areas with a high pollution index, even if the pollution was due to other industrial sources. Underground coal mining has the potential of greatly reducing the disturbance caused to the environment. However, current output levels from underground mining at 60 MT only and these mines are predominantly old. There has been very little fresh investment in underground mining.

Coal Reforms

Coal Mines Auction Policy

The methodology approved by the Government provides for production linked payment on rupee per tonne basis, plus a basic upfront payment of 10% of the intrinsic value of the coal block. The intrinsic value of coal block will be calculated on the basis of Net Present Value (NPV) of the block arrived at through Discounted Cash Flow (DCF) method. To benchmark the selling price of coal, the international FoB price from the public indices like Argus/Platts will be used by adjusting it by 15% to provide for inland transport cost which would give the mine mouth price. In order to avoid short term volatility the average sale price will be calculated by taking prices during the last 5 years. For the regulated power sector, it has been decided to provide for 90% discount on the intrinsic value for tariff based bidding. This methodology will help in rationalizing the power tariff.

In order to ensure firm commitment, there would be an agreement between Ministry and the bidder to perform agreed minimum work programmes at all stages. There would be development stage obligations in terms of milestones to be achieved such as getting mining lease, obtaining environment/forest clearances etc. The bidder will have to give performance guarantee during the developmental stage. The successful bidder will get 2 years for exploration (for regionally upgraded blocks) and 5 years for development of coal blocks.

Coal Regulatory Authority of India

1. Its job is to oversee principles of pricing, quality, mining practices, coal distribution and enhancing competition.
2. The regulator will not determine fuel rates, a job that will continue to be vested with the producers. The regulator will be, however, empowered to resolve disputes including those arising out of fuel supply agreements (FSAs).
3. Under the current system, it is mandatory for private companies operating captive coal mines to share surplus production with the nearest Coal India subsidiary at a "transfer price" decided by the government. Now the government is mulling allowing a reasonable incentive to captive miners for surplus coal sales, in view of the domestic shortage.
4. The coal ministry has added what it calls a "saving clause", to empower the central government to direct the regulatory authority to determine the principles and methodologies for determination of the price of coal.

Pass Through Mechanism

1. The proposal for coal price pooling has been shelved and instead power producers would be allowed a pass through mechanism.

FSAs with CIL

1. CIL will have to sign FSA with all plants being commissioned till 2015 and already having PPAs with discoms.
2. Approximately 50 GW projects will benefit from this but apart from these there are 21 GW projects which don't have any PPA with the discoms. They have been left out.
3. CIL in turn has decided to divert coal from steel and cement industry to power, discontinue the forward e-auctions and loosen environment norms to produce more from its mines.

Allowing private mining

1. To remove existing restrictions of captive mining and to be engaged in coal exploration. A bill has been introduced.

Switch from UHV to GCV System

1. The quality of Indian coal is poor and needs to be improved through coal washeries which calls for an expansion in washery capacity. But there has been a very marginal increase in the coal washery capacities. One reason for this is that the system of coal pricing does not contain a sufficient premium for higher quality coal. Hence the need to move towards GCV system from UHV.
2. Both are methods of grading coal. The GCV is the international method. UHV deducts the ash and moisture content from a standard formula (it takes total heat - heat absorbed by ash and moisture in the coal only) whereas GCV is the gross energy released on burning fully unit mass of coal.
3. CIL shifted from UHV to GCV method and the GCV prices are ~40% higher. So it had to roll back.

Renewable Energy

Renewable Energy Efficiency Proposal

1. The government has come out with Green Rating Integrated Habitat Assessment (GRIHA) ratings system and Energy Conservation Building Code (ECBC) to promote energy efficient buildings.
2. While the new GRIHA and ECBC systems will be promoted in private constructions, it is proposed that it be made mandatory for all PSU and Government buildings.
3. The drawback however is it remains voluntary for now and is applicable only for large commercial buildings.

Compact Fluorescent Lamp

1. Compared to general-service incandescent lamps giving the same amount of visible light but use one-fifth to one-third energy, and last longer.
2. But they too use mercury which complicates their disposal.

Solar Energy

1. India auctioned the rights to produce 350 MW of solar energy. The lowest bid was from a French company at $147 per Mw-hour (Rs. 7.5 per unit) which is ~30% lower than global average. Coal energy costs are $78 and wind energy costs are $77. But some experts doubt if they can produce at such a rate as they must have assumed that the technology will improve in near future.
2. India plans to have 20GW of solar energy by 2022 against current 1.3 GW under Jawahar Lal Nehru Solar Mission.
3. India's biggest solar park in Charanka in Gujarat has been commissioned with a capacity of 200 MW and investment of $500 mm. Gujarat government has guaranteed an offtake price of Rs. 15 per unit for first 12 years.

Hydro Energy

The Siang Project in Arunachal

1. Its a $20 bio project to span over 10 years. It will produce 10 GW electricity and would be country's largest.
2. Brahmaputra is called Tsang-po in Tibet, Siang as it enters India and Brahmaputra later on.
3. India is building it because China is also building a project on the river in Tibet in Metog.
4. According to the doctrine of prior appropriation, rights of first user are respected and in its absence rights of upper riparian states.

Wind Energy

1. India has 50 GW wind energy potential though some recent studies put a higher figure.

Electricity

1. Cost of power generation in 2011-12 was as follows: Hydro: Rs. 2.11, Thermal: Rs. 3.05, Nuclear: Rs 2.49.
2. New thermal plants of capacity 75 GW and hydro plants of capacity 15 GW are in pipeline. In 11th Plan, 54 GW capacity (40 GW thermal and 10 GW other renewable was added out of which 7 GW was wind energy) was added compared to 21 GW in 10th Plan.
3. Target for 12th Plan is 75 GW out of which renewable will be 30 GW (15 GW of wind, 10 GW of solar, 3 GW of bio mass, 2 GW of small hydro). This will take the share of renewable energy from current 12% to 15% by 2020. But out of the 75 GW, 17 GW has been shelved due to lack of coal and 15 GW is running behind the schedule and is unlikely to be completed in 12th FYP.
4. It mandatory for a specified percentage of total electricity in the country to be generated through renewable power while nationally tradable renewable energy credits have been introduced in the form of renewable energy certificates.

Grid Failure

(a) 12 Point Plan

1. Adequate defense plans and protection system shall be put in place including islanding scheme at state level. Plans should also include restoration procedures. A contingency load shedding protocol will be worked out.
2. States to prepare long term, medium term and short term plans to procure power.
3. Independent 3rd party audit and proper training of personnel by states.
4. All discoms to adopt good operating practices and random checks will be carried out.

(b) Reasons

1. Dropping PLFs. NTPC's PLF dropped from 92% to 85% in 2011-12 mainly due to lack of coal and gas.
2. Discoms have no money to buy electricity (they suffer a loss on every unit sold). But they are allowed to defer payments on the overdrawn power. Moreover if they project a demand and fail to lift the said power, they have to pay a penalty. So they prefer to submit low demand projections (for which they have to pay upfront) and instead overdraw.

Power Sector Reforms

Amid rising losses, the union power ministry has formulated a model state electricity distribution management responsibility Bill, 2013, on the lines of the Fiscal Responsibility and Budget Management (FRBM) Act.

The Bill aims to provide for responsibilities of the state government to ensure a financial and operational turn around and long term sustainability of the state-owned distribution licensee. This is to enable adequate electricity supply to consumers through financial restructuring.

The model Bill envisages the state government to submit the electricity distribution management statement on the measures taken in relation to distribution, in each financial year during the budget session to the legislature. A slew of measures would be in the areas of long term planning, consumer protection, regulatory compliance, corporate governance and financial restructuring.

Further, the state government would lay down key performance indicators with regard to payment of dues by government departments and institutions, distribution loss cut trajectory, provisioning of subsidy, energy accounting and auditing, improvement in collection efficiency, recovery of past receivables.

Moreover, the Bill ensures 100 per cent metering and consumer indexing to be achieved within three years and the establishment of special courts for settling theft cases within a year if not set up. The distribution licensee would have to increase collection efficiency at 1.5 per cent a year if it is between 95 per cent to 99 per cent, at 3 per cent if between 90 per cent and 95 per cent and at 5 per cent if between 80 per cent and 90 per cent.

Former union power secretary R V Shahi was sceptical as he observed that state governments in general did not seem to be serious about distribution reforms. "In the last five years, the situation has in fact worsened. Commitments made by states in their agreement with the union power ministry have not been implemented. Unless the distribution is privatised or at least

franchised, the objective of the model Bill would not materialise," Shahi said.

According to the model Bill, the state government would make a financial restructuring plan (FRP) or other such schemes a part of the state budget statements for effective monitoring of its impact on the state finances. Besides, the state government would ensure that the distribution licensee does not resort to short term loans for funding operational losses except as provided in the FRP.

Discom Reforms

1. Government refused to bail out ~$38 bio of distribution companies losses (accumulated since 2003 and which have been financed via PSU banks and states' subsidies). It also refused to coerce banks into lending them. Instead it wants discoms to raise electricity prices and state governments to support them.
2. Discoms also can't issue SLR bonds as this would set a bad example and undermine the financial stability of the entire system.
3. Under the new package, discoms will have to mandatorily revise their tariffs every 9 months. They will have to issue bonds for half of the accumulated losses and government will guarantee the other half.
4. A National Electricity Fund has been setup to give interest subsidies (currently $1.6 bio) to discoms.
5. Discoms can be improved by including modern technology and management systems or by privatization or hiring a management company (system called franchising).
6. Open Access Policy (where consumers are free to chose from competing discoms) should be followed.
7. A rating system has been introduced for all discoms which is based on their current performance as well as improvements so as to incentivize them to perform better. Factors directly affecting commercial viability like AT&C losses, cost coverage ratio, subsidy received etc. carry 60% weight. Compliance with regulatory practices is given 15% weight. Modernization of technology, management system, better audits, purchase of renewable energy etc. are given 25% weight. Similarly negative points are earned for certain negative traits.

Other Reforms

1. Institutional reforms: Currently the power producer has to bear the fuel price risk as fuel costs are not included in the force majure clause. The government has proposed to let producers pass on the fuel price rise to end consumers.
2. Supply side reforms: The coal being e-auctioned off by CIL will be diverted to power projects that are coming up on assurances of fuel from CIL only. This is expected to free up 45 mm tonnes.
3. Fiscal reforms: Under the Mega Power Policy, equipment import for plants >1000 MW is duty free. It will be extended to all plants. Import duty on coal and gas have been abolished. Additional depreciation of 20% allowed on new investments for the 1st year.
4. Capital reforms: ECB mode allowed and also withholding tax reduced from 20% to 5% on ECB interest payments.
5. Renewable energy: Discoms will have to sign minimum renewable purchase obligations. Renewable energy certificates will start trading through power exchanges. National solar mission envisages 20 GW of solar energy by 2020.
6. Technological reforms: Super critical and ultra critical thermal power plants to form 60% of additional thermal capacity in 12th FYP and 100% in 13th FYP.
7. Restructured accelerated power development and reforms programme: Its an IT and automated systems based structure applicable in urban settlements with > 30,000 populations. Part A includes IT applications for energy auditing like mapping of all assets, consumer grievance redressal, IT applications for meter reading, billing, MIS and a call center. Part B includes activities to strengthen regular distribution. It includes renovation of assets, electronic meters etc. On successful completion it will reduce AT&C losses to 15%.

Issue of Environmental Clearances

1. Total capacity added in 11th FYP was 54 GW. 17 plants of capacity 15 GW are stuck for want of environmental clearance for their captive coal blocks. 3 plants of capacity 4 GW are stuck for want of environmental clearance for themselves. 27 plants of capacity 16.5 GW have got clearance from Committee for Environmental Appraisal but have not got approval from the ministry so far.
2. The ministry noted that the 11th Five Year Plan had projected a target of 50,000mw of additional thermal power capacity and the total projection of power requirement for the 12th Five Year Plan is 100,000mw. In comparison, in the past five years, up to 2011, the environment ministry has granted environmental clearance to 210,000mw — 60,000mw more than has been proposed until 2017.

Renewable Energy Certificates

Critical Power Plants

1. Concept of critical stage: @ 100º C, 1 bar (atmosphere pressure) water begins to boil and its latent heat is 2200 kJ per kg. @ 100 bars, boiling takes place @ 310º C and latent heat is 1300 kJ per kg. @ 220.6 bar and 374º C, water directly turns into steam and latent heat is zero. This is called the critical pressure and critical temperature i.e. the pressure and temperature at which the latent heat of vaporization is zero.
2. Sub critical, super critical and ultra super critical plants: Conventional power plants operate @ 170 bar. They are subcritical power plants. Supercritical power plants operate @ 230 - 265 bars. Ultra super critical plants operate @ 300 bars and 625º C. Higher pressure and temperature leads to higher efficiency.

Integrated Energy Policy, 2009

1. Neutral overall taxation on energy sources with only intra-energy sector tax variations to comply with environmental goals.
2. Promoting energy efficiency via technology and competitive markets and market determined prices. Setup a national energy fund for R&D.
3. Autonomy and accountability to energy PSUs.
4. India will pursue all available fuel options and energy types and seek to acquire resources abroad.

Rajiv Gandhi Grameen Vidyutikaran Yojna (RGGVY)

Scope and Achievements

1. An electrified village is a village where least 10% households and all important public places are electrified. It aimed to electrify all villages and rural households by 2012. Estimated outlay is $10 bio as against initial estimates of $3 bio in 2005.
2. The scheme involves infrastructure construction and free connections to BPL households and connection on demand for APL households.
3. Electrified villages are now 91% of total against 75% at the beginning of the scheme (in 2005). Electrified households are 75% against 44% in 2005. It has created a massive rural electric infrastructure which can be levered upon in future. Also an overwhelming majority of the households electrified are BPL households.

Limitations

1. Inflexible approach: A top down approach and one size fits all was adopted.
2. Lack of interest from states: All states were expected to submit their plans within 6 months but the first plans didn't arrive by 2008 and even now not all plans are in.
3. Lack of sufficient preparation: As is evident from the fact that cost estimates have gone up by more than 3x since the launch and still we are nowhere close to total electrification.
4. Poor quality of electricity delivery: When it started out it was stated that rural households will be provided electricity at par with the urban households and sufficient electricity for sustaining economic activities will be provided. This has already been watered down to 6-8 hours (while reality is 2 hours) electricity per day and "indirectly" aiding economic activities. Load provided is only 50 watt against standard 250 watt.
5. Improper monitoring: Lacks social auditing like MGNREGS.

Arun Maria Committee Report on Power Equipment Import

Recommendations

1. Specifying standards including environmental for the power equipment to be used (a proxy for non tariff barrier).
2. At present power equipment attract a customs duty of 5% (if < 1000 MW beyond which it is free). The proposed structure is a basic duty of 5%, CVD of 12%, special additional duty of 4%.

Pros and Cons

1. In 12th FYP total funds needed in power sector are ~$230 bio. But banks are already too exposed to the sector and are not willing to lend more. So ECB becomes the only viable route to fund such projects. But imposition of duty will hamper imports and thus loans from EXIM banks.

2. The domestic equipment manufacturing industry has been unable to meet the demand in a time bound fashion. So restricting imports will be harmful.
3. But Chinese equipment are energy inefficient and require more maintenance. Moreover Indian industry has ramped up its production capacity. Current capacity is 20 GW p.a. as against a demand of 17 GW while additional projects are coming up and in next 2 years it will be 40 GW. Chinese manufacturers enjoy state subsidy as well.
4. Power equipment imports have been rising @ 28% p.a. in last 5 years and were $12 bio in 2010-11.

Reactions

1. GE has protested against it as it will make its equipment dearer by 20% and if EU FTA is signed, EU companies will get duty free access.

Fly Ash Utilization

1. Fly ash is classified into two types according to the type of coal used. Anthracite and bituminous coal produces fly ash classified as class F. Class C fly ash is produced by burning lignite or sub-bituminous coal. Class C fly ash has self-cementing properties.
2. Fly ash contains many elements and hence is useful in fertilizers. Class C can be used in cement (it contains silica and calcium), bricks and ceramics. Fly ash particles are almost totally spherical in shape, allowing them to flow and blend freely in mixtures. This property make fly ash a desirable for concrete.
3. Fly ash accumulates in lungs and acts as slow poison. It is deposited on the alveolar walls where the metals could be transferred to the blood. It contains heavy metals and hence even wet disposal can't prevent soil pollution.

Flu Gas Desulfurization Policy

1. FGD is a technology to remove SO_2 from thermal plant discharges. The most commonly used method is wet scrubbing (SO_2 is an acidic gas so the exhaust gases are passed through a slurry of limestone or another alkali and SO_2 condenses as a sulphate), spray dry (making it pass through a substance which has the property of absorbing SO_2), wet sulfuric acid process (recovering commercial quality H_2SO_4 from it), SNOX desulfurization (removing SO_2, NO_x, RPSM. It first removes the RPSM, then reduced NO_x to N_2, then oxidizes and condenses SO_2 into H_2SO_4).
2. Indian coal has 0.3 - 0.5% of sulphur content only and so far no FGD technology was used. But with growth in imports (>9.5% sulphur content in imported coal), FGD treatment will be made a part of environmental clearance. Units with capacity > 500 MW and stations with overall capacity > 1.5 GW will have to provide space for installation of FGD in future if required.

External Account

Created: 11/6/2011 10:38 AM
Source: http://www.business-standard.com/article/economy-policy/imports-contract-by-double-digits-for-second-month-in-row-113111100204_1.html

External Account Policies: Trends

- India's external debt was a little just over $100 billion in 2004; by March 2013, this had grown to $390 billion. More worryingly, the short term debt payable within a year, an indicator of immediate vulnerability, has ballooned to $172 billion in 2013, from $54 billion in 2008.

FOREIGN INVESTMENTS

- Inflows of FDI registered a spectacular rise — from $9 billion in 2005-06 to $33 billion in 2010-11. Popular understanding is that while FII investments are volatile, FDI is much more stable, long term in nature and contributes to improving the competitiveness of recipient nations.
- However, in India the studies show that a large proportion of FDI is just as volatile and transitory as portfolio capital. It is found that the lowering of norms prescribing the minimum level of equity stake in an "FDI invested" project — from 40 per cent to 10 per cent — offered perverse incentives to capital flowing in the garb of FDI.
- Less than half of the investment was actually FDI; private equity, venture capital and hedge funds, which are volatile and normally associated with short investment horizons, accounted for 27 per cent; and about 10 per cent was actually portfolio investment. Over 10 per cent of the "investment" was round tripping by Indian entities, which funnelled money back through tax havens in order to take advantage of tax concessions and other inducements available to FDI projects.
- Indeed, manufacturing, which advocates of FDI said would be a key beneficiary, received only one-fifth of the investment; but even in this case portfolio and other short-horizon investors accounted for almost 40 per cent of the total investment.

CAD

1. In 2011-12 fiscal, it was 4.2%. In 2012-13 fiscal, it was 4.8%. In Q3, it shot up to a high of 6.7% but in Q4 it dropped to 3.6% only.

Trade Data

September

As a result, the country's trade deficit fell to $6.76 billion, the lowest level in two-and-a-half years. In the previous two months, exports had risen 13 per cent and 11.64 per cent in August and July, respectively. India's imports in the first half of this financial year fell marginally, by 1.8 per cent, to $232.2 billion.

October
Merchandise exports in October surged an impressive 13.47% to $27.27 billion compared to $24.03 billion in the same month last fiscal. This was the fourth month in a row when exports registered a double-digit growth and highest in last two years. Exports, then contracted in May and June this year as well. In October, imports declined to $37.82 billion, down 14.5% over $44.24 billion. This was the second month in a row when imports fell by double digits.Thus, the trade balance for October stood at $10.56 billion, almost half of what it was in the same month last year at $20.21 billion

Total non-oil imports during April-October reached $171.96 billion, down 7.43% . Total oil imports till October grew by 3.3% at $98 billion as against $94.9 billion, according to the data.

International price trends are also partly responsible. The crude oil prices fell to $103 per barrel last week, which was the lowest in last four months. Similarly, coal prices hit a low of $76.45 a tonne

this year on July 10, but since then it has risen by 6.5%.

April - October

1. Exports: $180 bio (+6.3%). Export target for 2013-14 fiscal is $325 bio.
2. Imports: $270 bio (-3.8%).
3. Trade deficit: $90 bio. Last year it was $112 bio in this period.

2012-13

1. Total exports: $300 bio (-1.5%). Petroleum products remained the largest item in India's export basket rising 8% to $60 bio. Exports of pharmaceuticals rose 10.5% to $15 bio. Capital goods went up 6% to $15 bio. A significant laggard among traditional export items were textiles which declined to $9 billion. Iron ore exports fell sharply too.
2. Total imports: $490 billion (-). Significant demand increase was in petroleum products ($170 bio, +9%), fertilizers ($15 bio, +8%) and edible oils ($11 bio, +16%). Imports of gold ($54 bio, -5%), semi-precious stones and coal saw a fall.

Export sops

Concerned over export contraction in May and June, the government on Wednesday announced a hike in interest subsidy to engineering goods, textiles and related segments to three per cent from the current two per cent, taking a hit of Rs 450 crore in remaining seven months of the financial year.

The government will also clear claims of exporters on interest subvention for 2012-13, which will dent the government kitty by another Rs 1,550 crore.

Indeed, the action taken by the government to address the problem, far from being long-term and sustainable, consisted of quick fixes. One such move was restrictions on gold imports: duties were raised considerably. Naturally,smuggling picked up immediately, and such restrictions cannot be continued for long without creating an entire criminal infrastructure devoted to circumventing the law, as had existed in the closed-off India of the 1970s. Another such quick fix was to set up a special currency window for oil importers, which essentially kept Indian purchases of dollars in order to buy oil off the spot foreign exchange markets. Again, this is not a measure that can be used indefinitely; oil companies need more than $8 billion a month to pay for their imports. Another short-term way in which this was being accomplished was through facilitating swaps between foreign currency non-resident deposits in banks and banks' overseas currency borrowing. This is due to be wound up at the end of the month. In these cases, the government of India cannot go on underwriting currency risk forever.

Sheel (2013) on External Imbalance

1. If capital flows are currently adequate to finance CAD, this is because of easy monetary policy, including quantitative easing which is pushing volatile capital flows into emerging markets. This "push factor" could change anytime.
2. Overall investment in the economy has *not* declined sharply. What has declined sharply is the productivity of investment i.e. ICOR.
3. It is therefore more important to increase savings to reduce the increasing savings-investment gap and restore the productivity of investment, than to simply increase investment.

Phase 1: 1950 - 65

1. India's CAD increased from flat in 1st FYP to -2% in 3rd FYP. It was due to increasing capital goods imports while having no export surplus. This led to a decision to devalue the currency by 57%. Imports were decreasing but exports were decreasing at a faster pace.
2. Foreign capital played an important role in capacity building. But this was mostly state owned capital and foreign aid. India's imports in 1950s increased at a fast pace partly as imports of food grains were needed and partly because of capital equipment needed for industrialization. Since India didn't have the surplus to pay for it, it relied mainly on bilateral aid programmes and aid / soft loans by world bank. India welcomed foreign aid.
3. Self sufficiency vs self reliance: Self sufficiency means not importing anything. Self reliance means having surplus to pay for the imports. India's focus of planning was self reliance but it became closely entangled with self sufficiency as surplus was not forthcoming.

Phase 2: 1965 - 80

1. India's trade policy changed to more restrictions on imports rather than enhancing export capacity. QRs and high tariffs were used. Average import duty collection rate went up from 20% in 1967-68 to 31% in 1979-80. Infant industry argument was propounded.
2. The wars with Pakistan in 1965 and 1971 changed the perception towards foreign aid as US used the PL-480 programme to twist Indian policy in the war. Efforts were made to achieve self reliance now and strict controls were put into place for its operations. 4th FYP made self reliance an explicit objective.

Phase 3: 1980 - 90

1. Efforts were made towards export promotion instead of import substitution: Gradual liberalization. Positive list was replaced by a negative list. Export subsidies were increased from 20% in 1979-80 to 25% in 1987-88 as a proportion of exports. But the slowdown in industrial countries and strengthening of real exchange rate meant that exports didn't go up in the first half. But a change from previous policies was that the response to slower export growth was not to attempt to restrain imports further. The attempt was to link imports to exports. Licenses on export industries were abolished. As a result of these and real depreciation of exchange rate in later half, exports began to go up. Imports too slowed down in 1st half but increased rapidly in 2nd half - specially oil imports.
2. Vague moves were made towards liberalization. A school of thought emerged which advocated that a poor country like India can't afford to spend resources in every field and thus foreign aid is necessary to achieve higher growth. But the opposite school of thought was equally vocal.

Phase 4: 1990 - till date

1. Liberalized policy was put into place. FDI can happen in more markets, ownership structures.
2. Automatic routes were provided in many sectors where the investor merely has to notify RBI 30 days in advance from bringing the funds. Dividend balancing requirements have been removed.
3. Role of FIPB: In normal cases it has to process in 6 months. It can even meet the investor in person to expedite the process. It is empowered to approve 100% FDI in cases of high technology transfers.
4. As per 2004-05, apart from a negative list, automatic route within prescribed limits is to be followed for others. Procedures for FDI were also simplified and include things such as conversion of CBs and preference shares into equity.
5. FDI in DMIC project is being sought. Japan has promised $4.5 bio and Qatar is interested.
6. Self reliance: It is still valid as FDI can't plug all the gaps. Also the western countries have made efforts to discourage multilateral lending and shift to bilateral lending so as to be able to exert exclusive influence.

Current Account
Invisibles

1. It includes trade in services, remittences. India is expected to run a trade deficit of $185 bio, invisibles surplus of $107 bio ($40 bio surplus in services and $68 bio remittances) thereby making CAD of $78 bio or 4.2% of GDP. Capital inflows were $67 bio in 2011-12.
2. India's trade in services in 1990-91 was 4% of GDP which is 13% in 2010-11.

Foreign Trade
New EXIM Policy, 1991

1. Projects where capital imports were required would be auto-approved if financed via equity infusion or imports constitute < 25% of investment.
2. Trade Liberalization: Quantitative restrictions on imports of intermediates and capital goods were removed immediately and by the turn of the century QRs on imports of consumer goods were also removed. Our peak tariff rate has come down from 150% in early 90s to 12% now (for non agriculture products).
3. Shift in Export Promotion Policy: Until then focus was on specific export promotion schemes for individual products whereas overall atmosphere was biased against exports as INR was overvalued. This was changed to export promotion through fixing the overall macro-economic framework. INR was devalued and later left to market forces, convertibility was introduced in trade account in 1993 and current account in 1994.

India's FTA Policy

1. Till late 1990s, India mainly stressed on WTO route for trade liberalization. However, the success of FTAs elsewhere prompted a change in government policy and FTAs and CEPAs began to be negotiated.
2. The first FTAs were the result of politico-strategic considerations. Examples are India-Bhutan Treaty 1949, India-Nepal Treaty 1950, Bangkok Agreement 1975.
3. Next phase began when FTAs began to be signed increasingly for their economic logic. A distinction from the earlier phase was that now broader group of stakeholders including academia and businessmen were involved in the negotiations. Examples are SAPTA in 1993, India-SL FTA 1998, India-Thailand FTA 2003, BIMSTEC 2004, India-Mercosur FTA 2004, India-Singapore CEPA 2005.

Foreign Trade Policy, 2009

1. 25% annual growth in exports between 2011-12 to 2013-14. Exports should be $500 bio in 2013-14.
2. Doubling of India's share of exports into world's exports by 2020 from 1.5% to 3%.
3. Improving export related infrastructure. SEZs and now NIMZ are being promoted. ~400 SEZs have been notified out of which ~150 are already exporting. SEZs employ currently ~900K and exports are ~$70 bio on an investment of ~$40 bio. 100% FDI is automatically allowed in SEZs. However there have been complaints about the misuse of agricultural land in SEZs. India's SEZ Policy and Act mainly aim at providing easier business environment for exporters and provide infrastructure. SEZs need to have net positive cumulative fx earnings after 5 years of commencement of operations failing which they will be liable for penal action. Exports in 2011-12 were $70 bio, 2010-11 were $60 bio, in 2009-10 were $45 bio and in 2008-09 were $20 bio.
4. To reduce transaction cots through trade facilitation measures and other reforms. Online application filing facility has been made available to reduce the interaction between DGFT and traders.
5. Secure enhanced market access and new markets. Focus Market Scheme covers 112 countries giving duty credit of 3-4% and on 41 it gives additional 1% duty credit scrip. Market Link Focus Product Scheme incentivizes high export intensity products but having low market share in selected markets.

Q. Write in brief on SEZ and their socio-economic repercussions. (2011, II, 20)
Strategy adopted in FTP, 2009

1. Product Focus: Focus will be on Engineering Goods (target : $125 bio), Basic Chemicals ($25 bio target), Pharmaceuticals($44 bio target) and electronics ($17 bio target).
2. Market Focus: Under the Foreign Trade Policy, support for 41 new markets in Latin America, Asia and Africa was provided. Apart from this, to preserve our market share in old developed markets and to move up the value chain.
3. Brand Creation: To encourage quality, provide quality certification where needed, and to promote Brand India.
4. Technology and R&D: To promote high technology sectors like pharmaceuticals, electronics, computers, engineering etc.

2012 Supplement to FTP 2009

1. Thrust on employment intensive industries. 2% interest subvention scheme has been extended to labor intensive sectors till 2013. Hitherto the support was only available to handlooms, handicrafts etc.
2. Encourage domestic manufacturing and reduce export dependence on imports.
3. Promote moving up of exports in technology and value chain. 0 duty Export Promotion Capital Goods (EPCG) scheme has been extended till 2013.
4. Continue market diversification.
5. Encourage exports from NE.
6. Promote green manufacturing.
7. Reduce transaction costs by reducing human interface and simplifying procedures.

Trends and Patterns in Trade

Table 2: Share of Export of Principal Commodities Group (%)

Commodity	2000-01	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Primary products	15.90	15.60	13.50	13.70	12.00	13.40	14.20
Plantation	1.48	0.60	0.58	0.59	0.56	0.59	0.58
Agri and allied products	8.80	8.31	7.84	7.06	6.91	8.96	10.61
Marine products	3.16	1.06	0.83	1.17	1.04	1.13	1.15
Ores and minerals	2.62	5.61	4.26	4.88	3.45	2.75	1.85
Manufactured products	83.00	84.60	86.50	86.30	88.00	86.60	85.80
Leather and mnfrs	4.41	2.15	1.94	1.88	1.56	1.57	1.62
Gems and jewellery	16.75	12.07	15.33	16.27	16.13	14.67	14.45
Sports goods	0.15	0.08	0.08	0.08	0.07	0.07	0.07
Chemicals and related products	14.01	13.72	12.99	13.66	12.29	12.87	14.15
Engineering goods	12.87	20.68	21.85	18.21	19.84	19.14	18.89
Electronic goods	2.54	2.15	3.87	3.15	3.30	3.06	2.81
Projects goods	0.06	0.09	0.08	0.06	0.03	0.03	0.05
Textiles	24.26	11.33	10.43	10.71	9.24	8.89	8.78
Handicrafts	1.50	0.31	0.16	0.13	0.10	0.09	0.07
Carpets	1.32	0.58	0.42	0.41	0.41	0.28	0.33
Cotton raw incl waste	0.11	1.36	0.35	1.15	1.16	1.41	1.22
Petroleum products	4.29	17.42	14.87	15.77	16.52	18.32	19.98
Unclassified exports	1.66	2.49	4.13	4.83	7.40	6.18	3.39
Total	100	100	100	100	100	100	100

As noted by Kumar and Gupta (2008), the lack of a focused approach in identifying, sustaining and building the country's competitive advantage, the concentration of exports in low value categories and relatively poor inflow of foreign direct investment (FDI), especially in exportoriented industries are responsible for the relatively weak performance of India's manufacturing exports.

Exports have shifted towards technology intensive-manufacturing exports with an increased share of engineering goods, petroleum products, chemical and related products from labour-intensive traditional sectors like textiles, gems and jewellery, leather, jute, carpets and handicrafts. There is scope to im -prove effi ciency of these sectors

which can contribute to enhance their share in manufacturing exports. These sectors are facing peculiar problems. These include securing availability of raw material and alter native markets for gems and jewellery, corporatisation and compliance of environmental standards for leather, techno logy upgrades for improved productivity, balance between the domestic and export requirements for jute and ways and means to handle variations in international demand for carpets and handicrafts.

Micro, small and medium enterprises (MSMEs) have made substantial contributions to the Indian economy, and exports from this sector have been accorded high priority in India's export promotion strategy. The sector faces a number of problems

The focus on gold and oil alone to restrict imports tends to obscure other important impediments which are also structural and policy-induced. India has the third largest coal reserves in the world, yet it has imported substantial quantity of coal for internal consumption and thus share of coal and coke in total import rose from about 2.2% to 3.4% between 2000-01 and 2012-13. Similarly, one-third of fertiliser consumption is imported as there was inadequate production capacity within India. Share of fertiliser in total imports is still about 2%. India is also among the larger edible-oil-consuming countries, but it still imports edible oil from countries like Malaysia and Indonesia for domestic consumption. The ban on iron ore mining in several states has meant that steel producers have to import ore.

There has also been a phenomenal growth in exports of services during the last two decades, with service exports increasing from $4.6 billion to $142.3 billion; the average annual growth rate rising from 15% to 25% over the two decades.

Although exports have grown during the last two decades they have not kept up with the growth in imports (e g, export/GDP increased 11 percentage points between 1990-191 and 2011-12 whereas imports/GDP increased by 18 percentage points over the same period). As a result, the merchandise trade balance has worsened signifi cantly over the last two decades, from -2.9% of GDP in 1990-91 to an estimated -10.2% of GDP in 2011-12. The invisibles have, however, had a moderating infl uence with a surplus increasing from 0.6% of GDP in 1991-92 to 6% of GDP in 2011-12.

The ongoing current account defi cits have been fi nanced by capital infl ows; hence a surplus on the capital account. The composition of fi nancial fl ows to India has changed over time. Compared to 1990-91, when foreign direct investment (FDI) and portfolio fl ows constituted a small portion of the overall capital account, in 2011-12, they are estimated to comprise close to 60% of the capital account. In contrast, debt fl ows are estimated to account for about 30% in 2011-12, compared to 80% in 1990-91 (Chari 2012).

1. Rapid Growth: India's exports in 1970s grew @ 18%, in 1980s @ 7%, in 1990s @ 10% and in 2000s @ 20%. This has also led to India's share in world trade going up from 0.7% in exports and 0.8% in imports in 2000 to 1.5% in exports and 2.2% in imports in 2010. In 1991, Indian exports were 0.6% of world exports. Exports as a % of GDP grew only slowly to reach 6% in 1990-91. Since then they have become 17% now. Similarly imports have jumped from 9% to 27% now. FDI from nearly zero to 2% of GDP.
2. Change in Destination: Share of US and EU combined has fallen from 27% in 2000-01 to 19% in 2011-12. Share of Asian countries has gone up from 33% in 2000-01 to 57% in 2011-12. Share of Africa and Latin America gone up from 10% to 12%. USSR used to be a big destination for Indian agricultural commodity exports under the Rupee-Rouble Agreement.

Then USA used to be India's largest trading partner, then UAE and from 2008-09 China is the largest partner.

3. Increase in Services Trade: Services exports have risen faster @ 18% in 1990s and 25% in 2000s compared to 10% growth in merchandise exports in 1990s and 20% in 2000s. This has led to increase in services share in total exports from 19% in 1993-94 to 34% in 2010-11. Manufactured goods increased from 68% in 1988 to 76% in 1998 but declined to 63% in 2008.
4. Increase in Capital Goods and Base Metals: India's traditional exports are declining as a % of total exports. New exports coming up are in base metals sector. Another rise is in refined petroleum products from ~2% in 1993 to 13% in 2011-12. But the crude for this is imported and the value added component is just 15% of export value.
5. Increase in Technology and Human Capital Based Products: The share of primary sector (including ores) in exports came down from 23% in 1993 to 15% in 2010. Share of unskilled labor intensive products came down from 30% in 1993 to 15% in 2010. The share of capital intensive products has gone up from 25% in 1993 to 55% in 2010. Out of this, technology intensive exports have gone up from 10% in 1993 to 20% in 2010.
6. Agricultural Exports: Agricultural exports are targeted to reach $40 bio by 2014 from current $30 bio. Basmati rice is the single largest agri-item exported.
7. Increasing Diversification: If we use the Hirschman-Herfindahl index (H = $\sum s^2$) which is sum of squares of each commodity's share and adjust for the refined petroleum export, we find that diversification of Indian exports has increased from 1993. H Index has gone down from 0.04 in 1992-93 to 0.03 in 2010-11.

Q. Examine the challenges to export diversification and increase in export competitiveness of India. (2011, II, 20)

Q. In view of the fresh fears of global financial crisis arising out of decelerating credit ratings of US and sovereign debt crisis in peripheral Euro zone economies, analyze its likely impact on India's trade and growth performance. Suggest measures to contain it. (2011, II, 40)

Q. Bring out the broad changes in the level, composition and direction of Indian exports and imports since liberalization in India. (2010, II, 40)

Indian Trade and H-O Theorem

1. H-O Theorem states that a country will export more of the product in which it has a factor intensity advantage. So Indian exports of unskilled labor and primary products should be going up.
2. But reality is that Indian exports of capital intensive including technology intensive and human capital intensive products are going up and share of unskilled labor and primary products is coming down.
3. One reason is that advantage is relative. India's exports are going more to developing countries now and export share to developed countries which have capital advantage over India is decreasing. Share of Asia ex Japan has gone up from 33% in 2001 to 57% in 2011. Share of Latam has gone up from 10% to 12% and that of developed world has come down from 27% to 19%.
4. Another reason is that policies of the government can distort 'advantages'. Indian labor laws restrict the labor advantage and policies to promote capital formation decrease the capital disadvantage in India.

Recent Statistics
(a) 2011-12

1. Full year exports are expected to be $300 bio (up 21%) and imports $485 bio (up 32%) leading to a trade deficit of $185 bio.
2. Major import sectors are oil ($155 bio), gold ($60 bio), machinery ($35 bio), electronics ($30 bio), gems & jewelry ($30 bio), coal ($20 bio), fertilizers, steel and vegetable oils ($10 bio each). Major exports are engineering goods ($60 bio), petroleum products ($60 bio), gems & jewelry ($45 bio) , textiles & yarn ($20 bio), pharmaceuticals ($15 bio), electronics ($10 bio).
3. Labor intensive exports: Due to the slowdown in 2011-12 labor intensive exports have suffered the most. Handicrafts declined 23% ($200 mm) while carpets declined 20% ($850 mm).
4. Major exporting states are Gujarat, Maharastra, Karnataka, TN and Kerela.

Country	Comments
ASEAN	Current trade: $50 bio, FTA in goods operationalized in 2011, FTA in services under negotiation.
Myanmar	Trade target: $3 bio by 2015. Current aid: $300 mm. China's current trade: $5 bio, FDI: $16 bio. Main Chinese projects: Kyaukpyu - Yunan pipelines, railway lines, roads.
Malaysia	Target: $15 bio by 2015. FTA signed - covers movement of people, excludes automobiles, agriculture.
Thailand	Current trade: $8 bio, target: $16 bio by 2015. CEPA being negotiated. India wants Thai investments in pharmaceuticals, food processing and infrastructure.
China	Current trade: $60 bio, deficit: $20 bio. Target: $100 bio by 2015. Indian advantage in renewable energy, IT, basmati rice, TV channels. Chinese advantage in power plant equipment, telecom equipment, pharmaceuticals. MoU signed which agrees on need of balanced trade, removal of NTTBs, encouragement of Indian businessmen in Chinese fairs and settling of trade in local currency under BRICS.
Indonesia	Current trade: $20 bio with deficit of $8 bio. CEPA being negotiated - Indonesia reluctant to open up banking and health. Indonesian coal pricing policies hurt India.
S Korea	Current trade: $20 bio, target: $40 bio by 2015. CEPA in place. S Korea plans to invest $1 trillion in India by 2017 and wants to sell weapons and nuclear reactors. India wants to launch Korean satellites.
Australia	Current trade: $15 bio with deficit of $11 bio. Both have signed a coal action plan.
Japan	Current trade: $12.5 bio, target: $25 bio by 2014. CEPA in place - agriculture, automobiles kept out, simple visas, India gains access to pharmaceutical market. Japan wants rare earths.
EU	Current trade: $107 bio which is balanced. CEPA under negotiation.
Germany	Current trade: $24 bio with deficit of $3 bio. India exports textiles and chemicals while imports machinery, data processing products and chemicals. India wants electric vehicles and DMIC investment from Germany. Germany wants pharmaceuticals from India.
France	Current trade: $8 bio and stagnant. Deficit ~0.
SL	Current trade: $5 bio. Only S Asian country to have a CEPA with India.
Pakistan	Current trade: $5 bio. India imports cotton and cement, Pakistan imports chemicals and petroleum.
Nepal	Current trade: $2.5 bio. Both have a BIPA.
Bangladesh	Current trade: $6 bio. FTA being negotiated.
Ukraine	It seeks to sign an energy pact with India and also to provide weapons.
Belarus	India seeks to invest in pharmaceutical, fertilizers, food processing, IT and power sector in Belarus.
Romania	India seeks to invest in IT, telecom, pharmaceutical, agriculture.
Russia	Current trade: $10 bio, target: $20 bio by 2015. CEPA under negotiation - India wants to include the Eurasian Union into the CEPA as well. India looking for supply of raw material while it wants to invest in oil and gas exploration.
Africa	Current trade: $60 bio, target: $90 bio in 2015.
US	Current trade: $50 bio, including services: $100 bio.
S Arabia	Current trade: $25 bio, deficit: $15 bio. India exports refined petrol, rice and imports 27 MT oil. S Arabia pledged to supply 5 MT more to make up for Iran

	deficit.
Iran	India imports 17 MT from Iran and has reduced the target to 15 MT in 2012-13.
Qatar	India imports 6.5 MT of oil and 8.5 MT of gas. Plans to increase gas by 3 MT more. India looking to invest in infrastructure, pharmaceuticals, IT, petrochemical projects while Qatar wants DMIC, anchor investor in PSUs, renewable energy.
Israel	Current trade: $6 bio, target: $12 bio by 2015. Israel wants to sell its Mediterranean gas to India.
Iraq	Current trade: $10 bio, all oil imports.
Egypt	Current trade: $3 bio. India has decided to go ahead with Muslim Brotherhood.
BRICS	Current: $230 bio, target: $500 bio by 2015.

Q. Write on Indo-ASEAN trade relations. (2011, II, 15)

Debate: Is the increase in exports black money coming back?
(a) Yes

1. Slowdown Argument: How can Indian exports grow at such a pace when US and Europe are slowing down?
2. Tax Heaven Argument: Indian exports to tax heavens like Bahamas have gone up from $2 mm to $2 bio in past 2 years. Matching of Indian exports with other countries' imports is no proof of validity.

(b) No

1. Slowdown Argument: The rise in exports is merely the base effect. If the negative growth of 2009 had not happened, an export growth of 20% would have led to exports of $345 bio in 2011-12 much above the target of $300 bio. Also diversification has enabled India overcome the US-Europe slowdown. Such growth rates have been witnessed al over the world.
2. Tax Heaven Argument: Bahamas doesn't report all import numbers. WB estimates its imports to be $12 bio against reported $2.8 bio. Anyways, Indian exports match with the imports of other countries.

Debate: Implications of growing trade?
India's gross trade increased from 8% of GDP in 1951 to 20% in 2006 and 37% in 2004-05 to 53% in 2011-12. Is it good or bad?
(a) Good

1. Counter-Cyclical Buffer Argument: It can help cushion the impact of domestic cycles. In times of slowdown, imports will fall whereas exports should remain unchanged thereby help in cushioning the impact.
2. Global Coupling Argument: While global coupling argument can't be denied, as the example of China's recovery from global financial crisis shows, (a) capital sector linkages are more relevant , and (b) recoveries can be easier from induced cycles if right set of policies are followed.
3. Free Trade Argument: More trade makes industries more competitive as well as brings gains to the society.

(b) Bad

1. Counter-Cyclical Buffer Argument: The imports cushioning effect may not be sizable because most of the imports may be used in export industries. In such a case, they will remain rigid.
2. Global Coupling Argument: The growing trade makes economy more dependent on external forces and may result in induced cycles. This is specially so when most of the incremental growth is export led.
3. Free Trade Argument: More trade may lead to drastic destruction of indigenous industries and unemployment in long run.

Capital Account
External Debt

1. India's external debt is $335 bio which is ~20% of the GDP. ~75% of it is long term, low interest debt. Debt service ratio is 4.2. Public debt is 25% of the external debt. Commercial borrowings > NRI deposits > multilateral debt.
2. Policy followed is of borrowing long term, low interest from supra nationals, keep all-in ceilings on ECBs and controlling end-use and NRI deposits.
3. India's external debt rose by nearly 13% to $390 billion in 2012-13, mainly due to rise in short-term trade credit and external commercial borrowings (ECBs) in the back of high current account deficit. he high current account deficit witnessed during 2012-13 and it's financing increasingly through debt flows particularly by trade credit resulted in significant rise in India's external debt during 2012-13,
4. There has been sizeable rise in ECBs and rupee denominated Non-resident Indian deposits as well

External Commercial Borrowings

1. RBI specifies the all-in ceiling rate @ which corporates can borrow from international markets. In November 2011, RBI enhanced this ceiling and also made it mandatory for ECB proceeds raised for INR expenditure to be brought back to India immediately.
2. ECB limits through automatic route for eligible companies was increased from $500 mm to $750 mm.
3. FII limits in g-sec was increased from $10 bio to $ 15 bio and in corporate bonds from $15 bio to $20 bio.
4. Power projects, airlines, toll roads, small housing projects can now raise funding via ECB mode.

Foreign Direct Investment
Definition

1. It consists of net equity investment of foreigners in India in enterprises where they express a lasting interest (usually through management influence) +
2. Net reinvestment of earnings and dividends +
3. Inter-corporate loans (parent lending to subsidiary).

Future FDI Reforms Needed

1. Enactment of a FDI promotion law.
2. Overhaul of FDI policy to move from broad emphasis to resolve sector specific problems.
3. Urge states to cooperates.
4. Develop SEZs.
5. Make bank finance easily available.

Trends / Recent Reforms

1. India's share in global inbound FDI is increasing but still remains paltry @ <1%. Cumulative FDI (excluding remittances under RBI's NRI scheme) since April 2000: $170 bio. FDI in 2011-12: $36 bio, $20 bio in 2010-11, $25 bio in 2009-10, $31 bio in 2008-09, $24 bio in 2007-08.
2. Source countries: Mauritius: 38%, Singapore: 10%, UK: 9%, Japan: 7%, US: 6%. (cumulative since 2000)
3. Destination sectors: Services: 19%, Telecom: 7%, Construction: 7%, Computer software and hardware: 7%, Real estate: 7%. FDI has been concentrated not in export sectors but in domestic consumption sector. If we look at FI in 90s, share of services went up from 10% in first half to 28% in second half. Now it is over 50%.
4. Destination states: Mumbai: 32%, NCR: 19%, Karnataka: 6%, TN: 5%, Gujarat: 5%, AP: 4%. Region unknown: 25%.
5. FII: Cumulative since April 2000: $117 bio. FII in 2011-12: $17 bio, FII in 2010-11: $29 bio, FII in 2009-10: $29 bio, FII in 2008-09: -$15 bio, FII in 2007-08: $20 bio.
6. Outbound FDI was 60% of inbound FDI in 2011-12. Chief sectors are manufacturing.
7. In commodities exchanges, FDI up to 26% and FII up to 23% was allowed but through approval route. Government has made FII through automatic route now.
8. To pay for capital goods imports, issuance of equity shares was allowed so far. But the government has excluded the import of second hand capital goods from this policy so as to encourage the use of clean and green technologies.

Q. Compare the role of FDI and FII in India's economic development. Are FDIs preferable to portfolio investments? Evaluate. (2011, II, 30)

Q. Examine the role of FDI in the Indian economy empirically. (2009, II, 20)
Debate: FII inflows: good or bad?
In 1990-91, India's Gross Capital Flows were 15% of GDP which became 54% of GDP in 2010-11.
(a) Good

1. Efficiency Argument: They help in bringing international best practices into domestic institutional and legal framework. To encourage FIIs, a country has to mend its laws and institutions. They increase depth of the market, help lower capital costs.
2. Law of Large Numbers Argument: Just like not all bank deposits may be withdrawn @ the same time except for a bank run, not all FII flow will be withdrawn @ the same time. A part of it is core.
3. Beggars can't be Choosers Argument

(b) Bad

1. Subramaniam (2007) shows that international experience suggests that higher growths have not been associated with higher CADs. This means dependence on foreign capital is not essential for growth. This can be attributed to the fact that even successful developing countries have limited absorptive capacity for foreign resources - either because their financial markets are under developed or their economies are prone to over valuation caused by rapid capital inflows.
2. A similar distinction can be drawn between equity and debt creating capital inflows. While equity flows may be allowed, debt flows should be treated with caution.

Debate: Rationale of FDI
(a) Good

1. Savings & Capital Gap: It helps to relax domestic savings gap. It provides equity financing and additional capital.
2. Fx Gap
3. Technology Gap
4. Competition Gap

Q. Is India ready for full capital account convertibility? Assess. (2011, II, 30)
Debate: Is India ready for full convertibility?

1. In 1992 under the liberalized exchange rate management scheme government allowed 60% of proceeds in current account to be converted @ market rate and 40% @ official rate. This was the dual exchange rate system.
2. In 1993, all trade in goods was made fully convertible and in 1994 full convertibility was allowed for invisibles as well.

(a) Allow convertibility

1. RBI over the years has come up with many instruments to control the impact of fx flows. One such is MSS launched in 2004 which sterilizes the fx inflows.

(b) Don't allow convertibility

1. FII is speculative and brings little good for the country. It may lower down the borrowing costs in short term but its like riding a tiger. It has to be managed with a very delicate balance. Take the example of banks. Recourse to short term funding may be cheaper than long term funding but still banks prefer long term funding. Because short term funding can evaporate as Bear Sterns and Lehman found out.
2. Higher FII means higher fx reserves have to be maintained. These fx reserves can't be invested in India so effectively FII crowds out domestic savings and is of little use.
3. So far we have been shielded from international crisis. Problems that plague other banking sectors have evaded us. International experience also suggests the same.
4. Fx flows opening will lead to sacrifice of exchange rate stability or monetary policy independence. Asian experience post QE by fed. Sterilization costs can be high as many Asian countries have found out.
5. Tarapore Committee said India needs CAD of <3% (currently 3.6%), inflation of 5% (currently 8%) and fiscal deficit of 4% (currently 6%) to go for full convertibility.

Maria Committee Recommendations on FDI in Pharmaceuticals Sector

1. In the pharmaceutical sector, 100% FDI was allowed through automatic route. There were many takeovers of Indian companies by foreign companies since 2006 which raised eyebrows at health and commerce ministry which want the FDI to go through government route.
2. But the Maria Committee has advised not to change the FDI regime and instead make the Competition Commission of India more competent to oversee these takeovers.

FDI in Retail
Context

1. Retail accounts for 14% of GDP and employs 9% of the workforce (next only to agriculture). ~95% of it is unorganized retail. Share of organized retail in other Asian countries is 20-25%.
2. It is argued that in other countries like China, Poland, Brazil organized retail is 20-25% and entire retailing sector accounts for 20-25% of the employment. In India organized retail is low and retailing accounts for only 9% of the employment. This means higher the organized retail, higher the employment opportunities. This argument is flawed. It can also be the case that in other countries, rest of the economic activities are less labor intensive and hence the share of retail in employment is high. In India, other activities may be more labor intensive. Also organized retail accounts for 5% of share in retail yet employs only 1.25% of the people engaged in retailing. This clearly indicates it is less labor intensive.

Features of the Proposal

1. A proposal has been accepted by the Cabinet to allow 51% FDI in multi brand retail.
2. Such companies will have to invest a minimum of $100 mm out of which at least 50% should go in back end infrastructure development like storage and logistics.
3. They will be restricted to towns >1 mm population.
4. They will have to source 30% material from Small Enterprises (<$1 mm).
5. Retailers will have to get clearance from the Foreign Investment Promotion Board and a license from the concerned state for every case.

Implications at WTO

1. GATT rules mandate that WTO member countries prescribe the same set of rules to domestic and foreign companies when it comes to purchase, sale, transport, distribution and taxation of goods.
2. Besides, TRIMS stipulates that foreign and local companies should face the same rules on investment.

Rationale for Allowing FDI in Multi-Brand Retail

1. There are gross inefficiencies in current supply chain. The number of intermediaries is high and investment in logistics and storage is minimal. Though India produces 230 MT of fruits and vegetables, our total cold storage capacity is just 25 MT. As a result there is lot of distress sale by farmers and wastage.
2. It will help in modernizing agriculture and marketing in India by bringing new management practices and technologies.
3. Though FDI in cold storage is 100% through automatic route, in the absence of front end retailing, flows have been negligible so far.
4. Industry estimates suggest employment of one person per 350-400 sq. ft of retail space, about 1.5 million jobs will be created in the front-end alone in the next 5 years. Assuming that 10% extra people are required for the back-end, the direct employment generated by the organized retail sector in India over the coming 5 years will be close to 1.7 mm.

Rationale for enhancing FDI ceiling to 100% in single brand retail

1. In the last 5 years, under the 51% regime, FDI in this sector have been negligible.
2. Globally, single brand retail follow a business model of 100% ownership.

FDI in Limited Liability Partnerships

1. The government has allowed FDI in LLPs in the open sectors i.e. sectors where 100% FDI is already allowed through automatic route.
2. In case of LLPs however, the investor will have to take government approval first.
3. Sectors like agriculture, plantation, media and real estate are not open to it.

Shipping

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History
1857-1914

1. Indian shipping industry was systematically destroyed. Indian ships were banned from entering € ports and heavy duties were imposed wherever they were allowed. At Indian ports as well, £ ships got preferential treatment in berthing and loading / unloading operations.
2. Even in coastal shipping, where Indian ships had dominated hitherto, £ ships took away the cream. Overall £ ships captured 7/8 of Indian maritime trade.

1914-47

1. War time shortages forced £ to develop Indian shipping as well. Scindia Shipping became the first Indian company to sail in modern seas. In 1923, £ appointed a committee which recommended - (a) Reservation of coastal trade for Indian ships. (b) Appointment of Indians in high posts in shipping and steps for their training. (c) State assistance for ship-building industry in India.
2. None of the recommendations were implemented and even a private bill for the reservation of coastal shipping for Indians was never allowed to go through.

1947-91

1. Shipping industry received government support. Kandla port was developed. Coastal trade was reserved for Indian ships.

Shipbuilding Industry: Current Scenario
Scenario

1. For maritime trade, India remains largely dependent on foreign vessels as domestic industry is not competitive. Indian government introduced a subsidy scheme in 2002 but when it lapsed in 2007, the share of indigenous shipping has fallen from 16% in 2007 to 5% in 2010. Indian shipping is now 11 MT gross tonnage as against 6 MT gross tonnage in early 2000s.

Problems

1. Inverse Duty Structure: There are no tariffs on import of manufactured ships but there are tariffs on import of capital goods for manufacturing ships. This means domestic players find it cheaper to import ships than buy it from domestic shipyards whose costs are high as they import ship building equipment.
2. Unequal Taxation: Globally shipbuilders are exempted from paying most taxes while in India they are not. Moreover there is no duty on import of ships as well. So there is uneven play.

Tonnage Tax

1. The shipping industry unlike other industries attracts tonnage tax and the budget has proposed to increase the tonnage tax by more than 50% on various class of tonnage effective from April 1, 2013.
2. ~90% of world shipping industry pays not other taxes (not even corporate taxes) but only a tonnage tax which is calculated on the basis of their net registered tonnage and not profits. Its effective rate works out to be negligible @ 2 - 3%. Indian shipping industry competes mostly with foreign players, hence tonnage tax was introduced in 2004-05.
3. Shipping industry is important because nations typically pay 4% of their value of trade as shipping costs. In Indian case it is 10%. So we need to develop an indigenous shipping industry. Shipping industry also has strong forward and backward linkages and its development has a ripple effect throughout the economy.

Tonnage Measurements

1. Gross tonnage (GT) is the total volume of all ship's enclosed spaces. Net tonnage (NT) is the volume of all cargo spaces of the ship. It indicates a vessel's earning space and is a function of the moulded volume of all cargo spaces of the ship.
2. Gross register tonnage (GRT) represents the total volume of a vessel measured in 100 cubic feet (2.83168 m^3) and was replaced by gross tonnage subsequently. Net register tonnage (NRT) is the volume of cargo the vessel can carry measured in 100 cubic feet.

Government Initiatives

1. Fiscal reforms: India introduced a tonnage taxation system which brought the taxes in line with international rates.
2. Institutional reforms: Coastal trade has been reserved for Indian flagged vehicles.
3. In 2012-13 India will be investing $3 bio in ports. Total capacity of 250 MT will be added. New capacity of 350 MT will be awarded this year which would bring in investment of $7 bio.
4. The tax-free bond scheme has been extended for one more year to enable the ports to raise funds to the tune of $1 bio for various projects. The rate of withholding tax on interest payments on external commercial borrowings has also been reduced from 20% to 5% for a period of three years for ports and shipyards.
5. The draught in most of our ports is not adequate for dealing with bigger ships, an important component for reducing costs. Deepening of selected ports and also intermediate off-loading terminals offer solutions that should be carried forward in the course of the Twelfth Plan. The pace of dredging has been inadequate and needs to be greatly expanded. The capacity for dredging of ports in the private sector needs to be further augmented and full operational flexibility given to the ports to use it.
6. Another constraint that has emerged is the lack of capacity/availability of rail and road networks linking ports especially the new minor ports coming up in the private sector. These connectivity projects should be identified on a priority basis and implemented using private participation wherever possible. In such cases the projects will need to be facilitated including in the matter of land acquisition.

Maritime Agenda, 2020
Objectives

1. To create a port capacity of 3.2 bio tonnes to handle a traffic of 2.5 bio tonnes by 2020. Currently it is 1.1 bio tonnes of capacity handling 930 MT.
2. To increase India's share in global ship building to 5% from the present 1%.

Policies to be followed

1. Greater PPP and number of projects sanctioned.
2. Investment of $55 bio in ports by 2020 -$20 bio in major ports and $35 bio in minor ports.
3. A 'land lord' based system where the port's job would be only to provide basic infrastructure. Operations of the port would be left in private hands.
4. A Land Policy where all port land would be inventoried and put to use - either for port or lease out.
5. Fiscal sops like tonnage tax and exemption from MAT to be discussed.

Merchant Shipping Amendment Bill, 2013

Now, India
intends to accede to the International Convention for the Control of Harmful Anti-Fouling Systems on Ships, 2001 (hereafter referred to as AFS Convention 2001). This Convention aims to protect the marine environment and human health from adverse effects of use of listed harmful anti-fouling systems as the anti-fouling paints on ship's surface lead to

"leaching" of these paints into the sea water which persist in the water, thereby causing harm to the environment.

making it mandatory for Indian flag
vessels to comply with Anti-Fouling Systems and to obtain a certificate of compliance thereof. Under the provisions of the Merchant Shipping (Amendment) Bill, 2013, all Indian flag vessels having 400 gross tonnage or more, engaged in international voyages, would be issued with an International Anti-Fouling System Certificate, after due verification. This will enable them to engage in international shipping activities without having to approach Government of other countries, who have ratified the Convention for such certificates. Further, India will be able to ensure that all foreign flag vessels entering territorial waters of India,

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Welfare Indicators

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Evolution of the Concept

1. Development a synonym for economic growth: Todaro called economic development as a sustained annual GDP growth rate of 5 - 7%. Till 1960s economic development was a synonym for economic growth.
2. Growth with redistribution of 60s: During the 60s many LDCs realized that despite realizing their economic growth targets there was no appreciable decline in poverty and the standard of life of the masses. Thus they began to call for redistribution with growth. It called for increased social programmes.
3. Crisis of 80s and early 90s: GDP growth rates for most of these countries slowed down / turned negative and the governments were forced to cut down on social programmes.
4. Human development approach: This puts the purpose of development as enlarging people's choices. Growth is only a means of capability expansion and not an end in itself.
5. Sustainable development approach: It addresses both intra generational as well as inter generational equity. It gives high priority to poverty reduction, productive employment, social integration and environmental regeneration. Raising per capita income is just one part of sustainable development. It has other more specific goals as well like bettering their health and educational opportunities, giving a clean environment etc.

Seer's Concept of Development

1. What is happening to poverty?
2. What is happening to unemployment?
3. What is happening to inequality?

World Bank's Concept of Development

1. During the 80s, WB championed economic growth as the goal of development. But in the 1991 report it admitted that growth was not an end in itself and the challenge was to increase the quality of life of people.

Goulet's Core Values of Development

1. Sustenance: These include the life sustaining basic human needs i.e. food, shelter, health and protection. An absence of any one of these is called the condition of absolute under development.
2. Self esteem: It is another very important component of improved life - not to be used as a tool by others for their own end. It is increasingly being linked to wealth in developed countries due to importance attached to material needs.
3. Freedom: To be able to chose. The advantage of growth is not because wealth increases happiness, but because it increases the range of choices.

Sen and Dreze on Freedom and Capabilities

1. One way of seeing development is in terms of the expansion of real freedoms that the citizens enjoy i.e. an expansion of human capability.
2. Capability refers to the alternative combinations of functionings from which a person can chose. Even relative poverty can lead to curtailment of absolute capabilities.

Progresses in Human Development / MDG

1. Poverty: World population living below $1 per day has fallen from 29% in 1990 to 18% in 2004.
2. Infant mortality: It has fallen from 106 in 1990 to 83 in 2004.
3. Life expectancy: It has increased by 3 years in the same period.
4. Education: Primary school completion rate has gone up from 83% in 1999 to 88% in 2005.

Failures in Human Development / MDG

1. Poverty: Much of the progress has happened in China and SE Asian countries. India and Africa are still lagging. MDG targets are set to be missed. There are still 1 bio people living below $1 per day.
2. Climate change: It will only accentuate the difference between 'haves' and 'have nots' because it hits the poorest hardest. There will be climate refugees.
3. Nutrition: 28% of children are suffering from malnourishment. The ratio is 42% in India. Both S Asia and sub Saharan Africa are set to miss the targets.
4. Infant mortality: Only 32 out of ~150 countries have met the MDG targets. Rest including S Asia and sub Saharan Africa are well set to miss it.

Sustainable Development - Todaro's Basic Issues

1. Environmental accounting: An account must be maintained of the damage we are causing to the environment or the degradation we are causing by using up natural resources. It calls for Green GDP approach.
2. Population: Growing population leads to increased pressure on environment.
3. Poverty: Leads to environmental degradation.
4. Growth: Leads to environmental degradation.
5. Rural development: Most of the people live in villages.
6. Urban development: Growing at fast rate. Can't sustain this.
7. Climate change: It will disturb the development. Carbon budget is the amount of gases which can be emitted without causing dangerous (rise in temperature beyond 2º C) climate change.

How does climate change affect sustainable development?

1. It reduces agricultural productivity. By 2080 additional 600 mm people will be facing acute malnutrition.
2. It heightens water insecurity. By 2080 ~ 2 bio people will be facing water scarcity.
3. It increases exposure to natural disasters as it increases the intensity and irregularity of floods and droughts. Poor and developing countries are the most affected.
4. It leads to collapse of ecosystems as is the example of fishes disappearing and coral bleaching.
5. It increases health risks as new diseases and microbes spread to new areas.

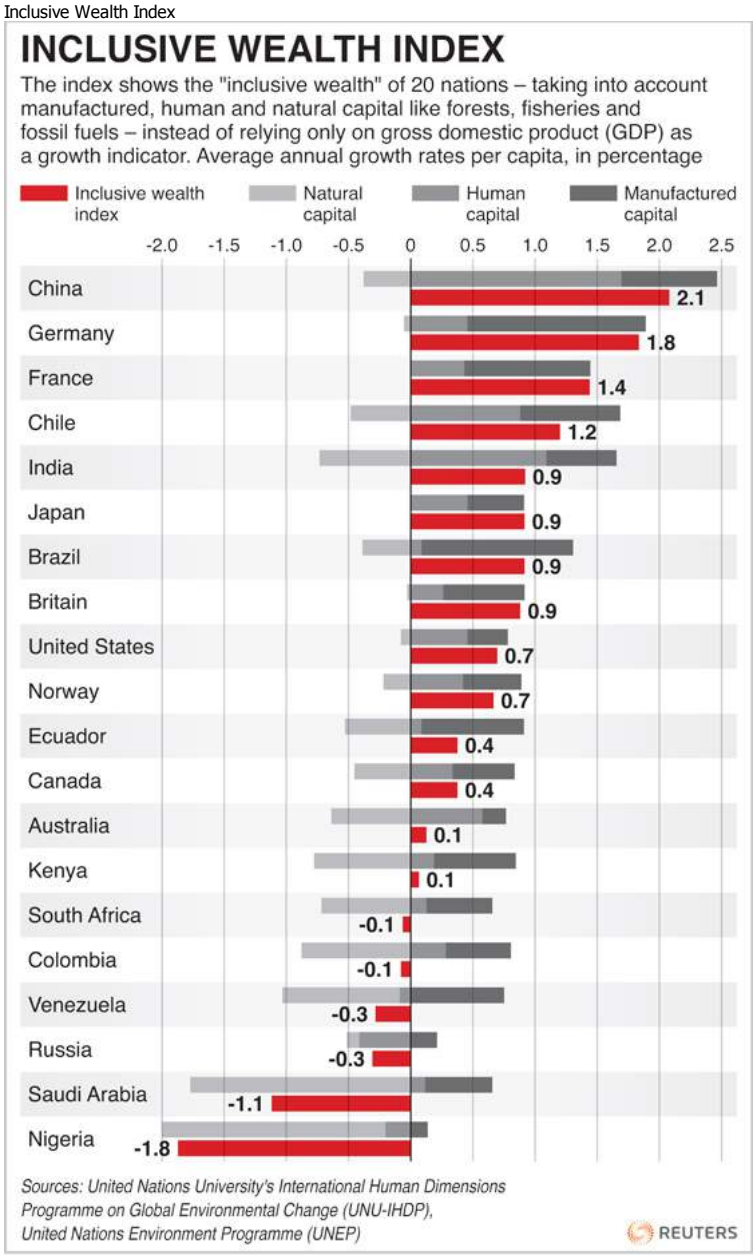
Amartya Sen and Dreze on Development vs Environment

1. Traditionally economic development has been seen as anti - environment and vice versa. But Amartya Sen and Dreze don't think there is any conflict between the two. Their concept of economic development is one which expands real freedoms which people enjoy i.e. creates capabilities. Integrity of environment is an essential part of capabilities and by plundering environment for growth we will be restricting this capability.

How environment degradation affects growth?

1. It compromises or undoes many growth projects. For example loss of village commons for expansion of agriculture leads to increased problems for dairying and water and fuel, dam silting.
2. It leads to worsening of health. What use is the growth if health is sacrificed and additional income is spent on health.
3. It has serious distributive issues since typically rich pollute and its the poor who have to bear the consequences.
4. It also has gender inequality aspect since females have to bear more.

Inclusive Wealth Index



1. It was developed on the notion that current economic production indicators such as GDP and HDI are insufficient, as they fail to reflect the state of natural resources or ecological conditions, and focus exclusively on the short term, without indicating whether national policies are sustainable. This index measures the wealth of nations by looking into a country's capital assets, including manufactured, human and natural capital.

Human Development Index
Index Construction
(a) Sub Indices

1. Health dimension: Life expectancy @ birth € [25, 85].
2. Education dimension: 2/3 * (mean schooling years in adult population) + 1/3 * (Expected years of schooling for school age children). Earlier the criteria used to be adult literacy rate and gross enrollment ratio.
3. Standard of living dimension: Per capita income @ PPP € [100, 40000].

(b) Constraints

1. HDI should reflect how far a country has gone in achieving certain measurable targets. So the maximum and minimum have been defined for each variable.
2. Life expectancy ∈ [20, 85].

(c) Result Evaluation

1. HDI ≥ 0.800 indicates high human development.
2. 0.799 ≥ HDI ≥ 0.500 indicates medium human development.
3. HDI < 0.500 indicates low human development.

Criteria Considered in HDI Construction

1. It should reflect human capabilities.
2. It should include only a limited number of variables to keep it simple and manageable.
3. It should be one single composite index instead of multiple indices.
4. It should cover both social and economic aspects.
5. It should be kept flexible.

HDI vs PQLI

1. PQLI captures only social well being. HDI captures both economic and social well being.

Empirical Studies on the Neoclassical Convergence

1. Baumol (1986) while studying beta convergence (per capita income growing faster in poor countries than in rich countries) showed that there is a strong beta convergence among industrial countries and those at the intermediate levels but there is no evidence of convergence as far as poorer countries are concerned. Similarly Zind (1991) couldn't find any general evidence of beta convergence but only when initial per capita incomes were > a threshold.
2. Dowrick (1992) shows that while there is some evidence that the growth rates have been negatively related to the initial productivity levels when controlled for other factors. However, the movement in other factors has caused the per capita incomes to actually diverge.

India Human Development Report, 2011
Index

1. In 2001, PC came up with states' HDI which is similar in construction to the UNDP HDI and ranked them.
2. Per capita expenditure adjusted for ≠.
3. Life expectancy @ birth.
4. Weighted averages of literacy rate for groups in 7 years and above + mean schooling years adjusted for out of schooling children.

Trends

1. ≠ between states is decreasing. Gini coefficient between states has fallen from .33 in 2000 to .23 in 2010.
2. On almost all welfare indicators, SCs, STs, Muslims are converging with the national average.

Q. Why has accelerated growth in India not translated into faster poverty reduction?

1. Spatial concentration: Growth centers have been urban centers in coastal states like Gujarat and Maharashtra whereas extreme poverty has been concentrated in the rural areas of BIMARU states.
2. Sectoral concentration: Growth has been concentrated in services and manufacturing whereas agriculture has grown only @ 2.5% in 9th and 10th FYP and 3% in 11th FYP.
3. Jobless growth: In 1980s, 1% increase in GDP was creating ~3x jobs as it is creating now.

State Wise Snapshot of Development (2006)

1. National level: Life expectancy @ birth: 63.2, infant mortality: 57, birth rate: 23.5.

BIMARU States

1. Bihar: Life expectancy @ birth: 61.4, infant mortality: 60, birth rate: 30.
2. MP: Life expectancy @ birth: 57.7, infant mortality: 74, birth rate: 29.
3. Rajasthan: Life expectancy @ birth: 61.7, infant mortality: 67, birth rate: 28.
4. UP: Life expectancy @ birth: 59.8, infant mortality: 71, birth rate: 30.

Developed States

1. Gujarat: Life expectancy @ birth: 63.9, infant mortality: 53, birth rate: 23.
2. Maharashtra: Life expectancy @ birth: 67, infant mortality: 35, birth rate: 18.
3. TN: Life expectancy @ birth: 66, infant mortality: 37, birth rate: 16.
4. Kerala: Life expectancy @ birth: 73.9, infant mortality: 15, birth rate: 15.

Q. What is HDI? Give its limitations as a measure of economic development and suggest improvements. (2009, I, 20)

Q. Explain sustainable development. (2007, I, 20)

Q. What are the human development indices used for international comparison of status of development? Elaborate the methodology used for developing the HDI. (2007, I, 60)

Q. Distinguish between economic growth and economic development. What desirable changes are necessary for achieving the objective of economic development? (2006, I, 60)
Physical Quality of Life Index (Morris D. Morris, 1979)
Index Construction

1. Infant mortality rate.
2. Life expectancy @ 1 year.
3. Basic literacy @ age of 15 years.

Gender Inequality Index

1. Reproductive health: As measured by MMR & adolescent fertility rate.
2. Empowerment: Proportion of women receiving secondary education to men receiving secondary education and % representation in parliament.
3. Labor force participation.

Human Poverty Index

1. Life expectancy.
2. % of illiterate adult population.
3. Water availability + malnutrition.

Q. Compare HDI with HPI as a measure of development. How is the HPI different from Happy Planet Index? (2011, I, 20)

Technology Achievement Index (TAI)

1. Creation of technology: (a) Patents per capita, (b) Royalty and licenses received from abroad per capita.
2. Diffusion of old innovations: (a) Tele-density, (b) Electricity consumption per capita.
3. Diffusion of recent innovations: (a) Internet penetration, (b) Share of technology product exports in total exports.
4. Human skills: (a) Mean years of schooling, (b) Gross enrollment ratio of tertiary students enrolled in sciences.

India Human Development Report, 2011
Index

1. Per capita expenditure adjusted for ≠.
2. Life expectancy @ birth.
3. Weighted averages of literacy rate for groups in 7 years and above + mean schooling years adjusted for out of schooling children.

Trends

1. ≠ between states is decreasing. Gini coefficient between states has fallen from .33 in 2000 to .23 in 2010.
2. On almost all welfare indicators, SCs, STs, Muslims are converging with the national average.

Basic Needs Approach

1. Basic needs concept arises from the need to eliminate mass poverty. However, unlike in 70s it is no longer a blind income or expenditure based approach today but incorporates other criteria like health, education, food security etc. It involves - (a) Identifying the core set of basic needs, setting up measurable criteria. (b) Identifying groups which are lagging in these basic needs. (c) Examining recent trends and fixing targets. (d) Devising strategies so that the targets can be met in reasonable time and implementing such strategies. (e) Analyzing the reasons for success / failure of the programme.

WB and Basic Needs Approach

1. In 1970s the WB was forced to abandon its earlier rhetoric of only growth as it was found that growth strategies usually fail to benefit the poor. Moreover whatever minor impact was felt would have taken a long time to lift the poor out of poverty. So basic needs have to be satisfied in the meanwhile. It also found that the incomes and productivity of the poor depend in the first place on the direct provision of health and education facilities. Moreover certain goods like education, sanitation etc. had strong positive externalities and thus could only be supplied publicly.
2. It can be seen that viewing basic needs as being in conflict with the growth objective is fallacious as it ignores the positive externalities. Similarly instead of the conventional view of viewing such transfers as transfer from investment to consumption, it is actually a transfer from physical capital to human capital which is more productive than physical capital.

National Minimum Needs Programme

1. Free and compulsory education for children between 6 and 14 years.
2. Ensuring availability of minimum public health services in all areas.
3. Providing safe drinking water to all areas.
4. Providing all weather roads in all areas with population > 500 in plains and > 250 in other areas.
5. Improvement of slums.
6. Providing homes to landless labor.
7. Universal electrification.
8. Nutritional assistance.

Kaldor's Growth Laws

1. The first law states that there exists a strong positive correlation between the growth of manufacturing output and the growth of GDP.
2. The second law states that there exists a strong positive correlation between the growth of manufacturing output and the growth of productivity in manufacturing. This is also called Verdoon's law.
3. The third law states that there exists a strong positive correlation between the growth of manufacturing output and the growth of productivity outside of manufacturing.

Environmental Economics

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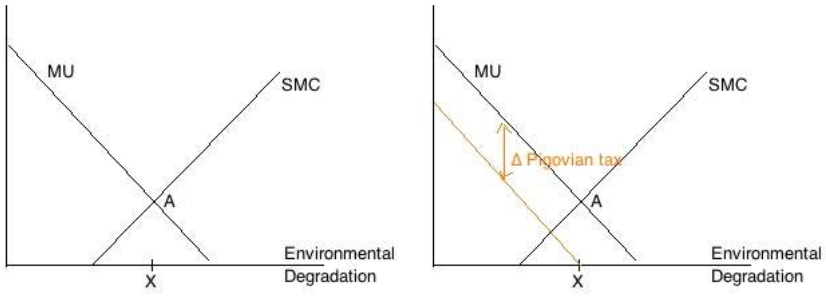
Development and Environmental Sustainability
Green Economy
The Market Based Approach or the Green Economy - Neoclassical Assumptions

1. It is implicitly assumed that the value of the consumption is determined by the individual consuming the good and not by the state or some other authority. Moreover in making consumption decisions, individuals ignore the externalities.
2. Rational consumers, producers and perfect competition. This means the economic costs are reflected in terms of the price.
3. The outcome of the market economy shall depend on the initial distribution of economic assets. Different distributions will give different outcomes. Thus the market based approach may not give a socially optimum outcome.

How to Handle Externalities in a Green Economy



1. Let the above left panel show the case where a dam is being constructed. The benefits of the dam (in form of hydro electricity etc.) will accrue to a select few people but the costs of the dam will be incurred by the whole society. There is a threshold below which there are no SMC because the environment can absorb certain degradation.
2. As per the neoclassical view, the optimum production (or environmental degradation) is @ point A (or X is the amount of degradation). But there is no way the markets by themselves can impose the SMC on the dam producers and thus if left to markets, the environmental degradation will be too high. This situation can be corrected via 4 approaches - (a) Pigovian taxes and subsidies, (b) Coasian bargains, (c) marketable permits, and (d) administrative action and legislation.
3. A Pigovian tax system is shown in the top right panel. Its advantage is that it is easy to implement. Just a tax is needed. But the disadvantages are that the precise impact of a tax is difficult to determine. The tax may be set too high or too low. And @ international level, its monitoring is difficult.
4. The Coasian bargain solution assumes that individual property rights are well established and economic agents can then bargain to arrive at the optimum solution. If the initial property rights are with the affected people, the benefit receivers will have an incentive to compensate them and vice versa. But its problems are that it is difficult to assign property rights and also transaction costs can impede bargaining process. Moreover if there are a large number of people involved such that monitoring of contract enforcement is difficult then there are problems of free riding.
5. The benefits of the marketable permits system are that - (a) The ceiling of the total pollution level can be fixed while fixing the total amount of pollution credits. (b) Different industries may have different ease in adopting green technologies. This lets market forces determine the outcome and hence is better for economic efficiency. (c) Targets can be set for individual members and hence it can work at international level as well. (d) Another reason for working at international level is that different countries vary in their ability in switching

over to green technologies. But its difficulties are that - (a) Initial 'Cap' allocation may be arbitrary. (b) It may be difficult to implement in developing countries.
6. Thus we are left with administrative / legal action which though inefficient is in most cases the only workable method.

Arguments Given in Support for and Against the Green Economy

1. As each service and resource is priced, its direct consumption may fall. Alternative technologies will be developed that use resources more efficiently or use cheaper substitutes.
2. The neoclassical system (often advocated by green economists) believes that prices of goods will reflect their true value. But obviously this has drawbacks. Another approach uses the belief that ecological systems have an intrinsic value independent of any value which can be attributed to them by humans. This approach gives rights to other species and environment as a whole.

The Concept of Discount Rate in Tackling Pollution

1. A stronger economy will be in a better position to handle the same anount of pollution. So if instead if investing in green technologies, we invested money in conventional economy only and if the growth so generated outpaces the increased costs of handling the pollution later then the future stronger economy will be in a better position to tackle the pollution. Thus discount rates are important.
2. However, the critics of this argument argue that it is very difficult to monetise the pollution costs. So a near zero discount rate should be used. This definitely is one criticism of Kyoto Protocol.

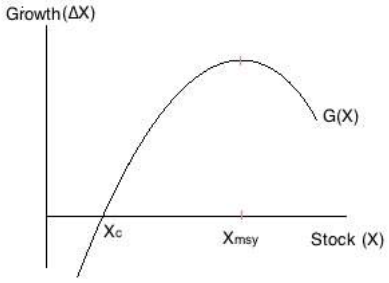
Additional Criticisms of Kyoto Protocol

1. The clean technology producng economies will benefit.
2. The choice if base year is arbitrary and will always create losers (high growth countries) and winners.

The Tragedy of the Commons in a Green Economy

1. The private marginal cost being close to zero and all costs to society being externalities, any rational farmer would use the common land till the private marginal utility is zero. This imposes a cost on the society in the form of lower soil fertility in the future. This is called the tragedy of the commons and in this sense the problems of the commons is an inter temporal externality.

Renewable and non Renewable Resources in Green Economy



1. Renewable resources are those resources which are capable of both growth and depletion. Let the above figure show a renewable resource (say fisheries) where its growth (ΔX) depends upon the stock level (X). Below a particular stock threshold (X_C) the resource is not able to regenerate quickly and thus is not able to sustain itself and the growth is negative. @ X_{msy} the growth is maximum and is called the maximum sustainable yield but beyond that the growth falls as there is competition etc.
2. Now as per neoclassical economics, an efficient use of a renewable resource means to maximize its social value over time. The optimum consumption level will be reached when the value of the social benefit lost by foregoing the last unit of consumption is just equal to the additional social benefit gained by the addition of that last unit to the stock. Let the present marginal social benefit value of one unit of the resource be v. Let also for simplicity the private marginal cost in harvesting the resource be zero. Let the social discount rate be r.
3. Thus if we don't consume the last unit, we will lose the benefit of v in this period. But in the next period we will have more stock to consume. This more stock will be the 1 unit we didn't consume in this period + the additional growth in stock (in 1 period) due to the addition of this 1 unit. The addition in the stock due to the addition of this one unit is $\partial(G(X))/\partial X$ or simply G'(X). The social value of this gain is v.G'(X). The social value of the additional unit of the resource is (v + Δv) where Δv is the change in social value between the two periods. Thus the present value of the additional stock in the next period is [v.G'(X) + (v + Δv)] / (1+r). This has to be ≥ v for one to forego the present consumption. Thus the condition for foregoing consumption is: G'(X) + (Δv/v) ≥ r.
4. The above equation implies that efficient consumption is not necessarily at the point of MSY since @ that point G'(X) = 0. Also for species which have low marginal productivity (i.e. G'(X) ~ 0) and also whose value doesn't increase appreciably as their stock decreases (i.e. Δv ~0), extinction may be the most efficient outcome! In the above discussion there is also the inherent assumption that we are able to catch all the externalities. But renewable resources are often commonly owned and it is difficult to define property rights. So while the desirability of the efficient outcome itself was questionable, the outcome of the market system is likely to be much worse. Also note the sensitivity of the sustainable development decision to the social discount rate r.
5. In case of non renewable resources, the only modification is G'(X) = 0. So the condition of foregoing utilization is (Δv/v) ≥ r (assuming extraction is costless or is already captured in v). Thus for an efficient outcome the social value of the marginal consumption should be increasing @ a rate r. In case the marginal cost of extraction is non zero, $v_t = mc + v_0 * e^{rt}$ where mc is the constant marginal cost of extraction. The exponential term is also called the discounted rental premium. If all externalities are captured in the private costs, a market system can generate an efficient solution. To prevent depletion, the social cost (v) should also reflect the option value, quasi-option value and the bequest values.

Environmental Degradation

What constitutes social value (or social cost)?

1. Social cost = private cost + external cost + rental premium (this is the economic rent commanded by the resource) + option value (the value of an option that this resource may be used in the future, for example, option value of biodiversity) + quasi option value (the value of an option that this resource may be used in the future with new possibilities being opened by the future knowledge) + existence value (this is the value placed on the resource independent of any possible future consumption) + bequest value. An efficient consumption must be able to capture all above costs.

Measuring Environmental Value

1. Once the environmental effects are captured then one way of valuing it is to use market prices. But this may not capture all the constituents of social cost as well as markets may not exist for many services and the scale of proposed use may alter these market prices themselves.
2. So another approach (specially for the services where market prices are not observable) is to asses the social values indirectly by observed economic behavior. This approach also covers the method of hedonic prices. Then another method within this approach is travel cost method i.e. the amount of time and costs people are willing to incur to travel to the areas with more pleasant environments.
3. A third approach to value the environmental effects is that of contingent valuation. Direct surveys are conducted where individuals may be asked about their willingness to pay for a particular environmental service or the compensation they would seek for the loss of such service. But it has obvious limitations.

National Income Accounting

1. Certain expenditures like soil erosion checking are incurred to prevent environmental degradation. Current practice is to include even these in the GDP as if they increase the welfare rather than maintain environment. These are actually defensive expenditures and should be excluded from GDP. Instead their environmental effects should be taken in the GDP.
2. Environmental degradation affects numerous services which are valuable but for which there is no market. For instance pollution affects the clean air, deforestation increases soil erosion. Such effects are not captured in GDP currently. Similarly the depletion of renewable and the non renewable resources is not captured currently.
3. A method to measure whether the development is sustainable or not follows the weak sustainability view (that the total capital should at least be maintained). It calculates the savings and then subtracts the depletion of natural, manmade and other forms of capital. If the resulting number is negative then it means the development is not sustainable. A variant of this

method is to use physical and not monetary values for various forms of capital. The accounts are divided into various sectors and changes in each are estimated.

Natural Capital, Equity and Environmental Values

1. The weak sustainability view considers all the different forms of capital (like manmade, human, natural, social) to be substitutes and aggregates them. The condition then for sustainable development is that the aggregate capital levels should be maintained. In support of substitutability they argue that for example degradation in soil fertility can be checked with increased use of fertilizers.
2. An alternative view of strong sustainability is that each of the capital is distinct and can't be aggregated. Thus a development is sustainable if each of the individual capital levels are maintained. This view is more conducive to preserving inter generational equity. Even natural capital is made of different resources and it can be argued whether each of them needs to be conserved or the aggregate of natural capital only needs to be conserved. The WB currently disagrees with the view that the economic development should take place under the constraint that the stock of natural capital should not be depleted.

Q. Why do energy elasticities tend to unity in industrially advanced countries? (2011, I, 20)

Q. What are the negative externalities of high energy coefficients? (2011, I, 20)

Q. Outline the global efforts to check the environmental degradation. Do you think that the advanced countries are cooperating in the effort? (2006, I, 20)

Intergenerational Equity Development
Choice of Discount Rate - Why Social Discount Rate is Needed

1. Individuals are said to suffer from myopia so that arranging their private affairs they tend to place more emphasis on present consumption. Thus they don't care about the welfare of the generations to follow them. But as a society it has to care and hence private discount rates may fail.
2. Even if we assume that people care about the future generations, AK Sen shows it may lead to two types of market failure - (a) the assurance problem i.e. savings by one individual for the future generations benefits all other individuals in the present who place a value on the consumption of future generations and hence a positive externality. (b) the isolation paradox i.e. the value which individuals place on their descendants' consumption compared with that of the rest of the future generations. If the return from the saving can't be captured entirely by the individual's descendants then again there will be an externality.
3. Distributional aspects have to be borne in mind. Welfare of the future generations is a distributional issue. Hence a social discount rate is needed. The impact of a lower discount rate on environmental degradation is unclear though. A lower rate means placing high value on the future. But most developmental projects incur costs in the beginning and benefits accrue in the end and thus a lower rate will sanction more projects and hence may harm the environment.
4. Another view which calls for intergenerational equity calls for the savings rate to be set such that the equilibrium growth path of the economy produces the maximum level of consumption for all generations. Each generation should do for the successor what it expects its predecessors to do for itself. This 'golden rule' requires that in equilibrium the rate of interest should be equal to the growth rate of economy which equals the growth rate of population.

Q. What are the objectives of National Environment Policy, 2006?

Growth Theories

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Harrod Model
Harrod vs Keynes

1. Harrod extended the Keynesian framework but where he differed from Keynes was that while Keynes considered effect of investment only in the short run i.e. to increase the demand via the multiplier effect, Harrod also considered the long run effect i.e. creation of productive capacity for future use, along with the short run.

Harrod vs Classical Economics

1. Classical economics treats development as a race between diminishing returns, growing population on one side and technological progress and capital accumulation on the other. Harrod drops the assumption of diminishing returns and assumes technological progress and population rise as exogenous factors.

Objective

1. He asks the question - if changes in income induce investment, what must be the rate of growth of income for plans to invest to equal plans to save in order to ensure a moving equilibrium in a growing economy through time? Moreover, is there any guarantee that the required rate of growth will prevail? If not, what will happen? In static Keynes, if the equilibrium between S & I is disturbed then the economy corrects itself to a new equilibrium level. However, if growth equilibrium is disturbed then will it be self correcting or self aggravating? Also will this equilibrium rate be equal to the maximum rate of growth that the economy is able to sustain given the rate of growth of productive capacity? If not, what will happen?
2. Thus he wanted to determine that unique rate at which investment and income must grow so that full employment level is maintained over a long period of time i.e. equilibrium growth is achieved. This is only possible if the additional demand generated by the investment is equal to the additional productive capacity created by it.

Assumptions

1. Economy starts from the full employment point.
2. Marginal capital - output ratio ($v = \Delta K/\Delta Y$) is same as average capital - output ratio (K/Y) and is greater than 1.
3. Depreciation is zero (simplifying assumption).
4. Marginal propensity to save (s) is equal to savings rate in the economy (s) i.e. marginal propensity to save remains constant at all levels of income and the intercept term is zero.
5. Proportional tax rate is zero so that Keynesian multiplier $1/\{1-c*(1-t)\}$ is same as $1/(1-c) = 1/s$.
6. Savings = investment i.e. closed economy and balanced government budgets.
7. Acceleration principle: Investment is proportional to the rate of increase in income i.e. increase in income induces an increase in the stock of capital.

Model
Harrod's 1st Growth Equation

1. Increase in income (ΔY) depends on increase in stock of capital (ΔK) during a period and the actual capital - output ratio ($v = \Delta K/\Delta Y$). So $\Delta Y = (\Delta K/v)$.
2. Now $\Delta K = I$ i.e. change in capital stock is nothing but investment. Thus $\Delta Y = (I/v)$. To express as growth rate, we rewrite as $(\Delta Y/Y) = (I/Y)/v$ or $G_y = (I/Y)/v$ where G_y is the actual growth rate. Thus it is clear that growth rate will be higher if investment as a proportion of GDP is higher or capital - output ratio is lower.
3. In Keynesian framework, actual savings = actual investment. Thus $G_y = (S/Y)/v$ or $G_y = s/v$.

Harrod's 2nd Growth Equation

1. The 1st equation is merely a definitional equation. We need more than a definitional equation to know whether the actual growth rate will provide the basis for a dynamic equilibrium in the sense it keeps the plans to save equal to the plans to invest @ full employment level. This is the warranted growth rate (G_w) which is that growth rate which induces just enough investment to match planned savings and thus keeps capital fully employed (and also labor since full employment assumption) so that manufacturers are willing to carry on investment in the future at the same rate as in past.
2. How is the G_w determined? Plans to save at any point in time are given by the Keynesian function: $S = sY$ and this gives us the potential supply of investment goods. The demand for investment goods is given by the acceleration principle $I_r = v_r.\Delta Y$ where the v_r is the warranted capital-output ratio and is given by $\Delta K_r/\Delta Y$. This ratio is determined by technological conditions. Thus we get, $s.Y = v_r.\Delta Y$ or $G_w = (\Delta Y/Y) = s/v_r$. At this rate expenditure on consumption goods will be equal to production of consumption goods as well.
3. While v_r is the desired capital - output ratio, v is the actual capital - output ratio. Let us consider the case when there is a departure of actual growth rate from the warranted growth rate. If say there are recessionary conditions (i.e. $G_y < G_w$), it means $v > v_r$ or the installed capital is not fully utilized. This means there is a surplus of investment goods and this will depress further investment. But if further investment falls down then the further growth rate will fall down as well and there is no method to ensure G_y increases and becomes equal to G_w again. Similarly in boom conditions (i.e. $G_y > G_w$), $v < v_r$ or the installed capital will be more than fully utilized. This shortage of capital induces the producers to invest more which

takes further G_y even higher and away from G_w. Thus any deviation is self aggravating.

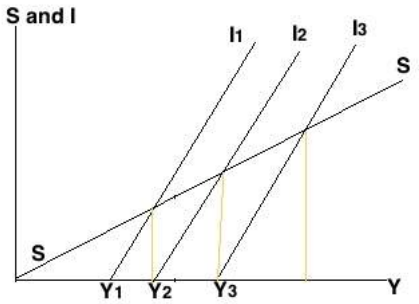
Harrod's 3rd Growth Equation

1. Now even if the economy grows at the rate required for full utilization of capital (i.e. G_w) this still doesn't guarantee the full employment of labor. This is because of 2 reasons - (a) G_w depends on technical factors (say how many machines are required to build one unit of output) while full employment of labor must necessarily depend on labor growth. (b) Harrod assumes labor and capital are not substitutable. Thus he conceives the natural growth rate (G_n) which is equal to the summation of labor growth rate and labor productivity growth rate (thus $G_n = n + q$ where n is the labor growth rate and q is growth rate in its productivity which is made possible by technical considerations). Both n and q are thus exogenously determined.
2. This natural growth rate defines the equilibrium rate of growth in the long run (clearly in the long run for the full employment equilibrium, $G_y = G_n$). Also if $G_y > G_w$ then G_y will increase but this expansion can't go on indefinitely (the availability of labor and natural resources will put a limit to it) and the increase in G_y will stop once it hits G_n. The long run question for the economy, thus, is the relation between G_w and G_n. For the full employment of both labor and capital, the required condition is $G_y = G_w = G_n$. This is also called Harrod's golden age.
3. Knife edge problem: The equality of all growth rates is called the balanced growth equilibrium or the growth rate. But it is seldom achievable. This is because they are determined by s, v_r, n and q which are determined quite independently of each other. G_w is determined by s and v_r, G_n by n and q. Thus if $G_w > G_n$ there will be a tendency for chronic depression (since $G_y = G_n$ in LR) and the actual growth rate will never be sufficient to stimulate investment demand to match the amount of planned savings. There will be too much of savings. If $G_w < G_n$ then there will be a tendency for chronic inflation because actual growth rate will tend to exceed the warranted rate. There will be too little savings.

Role of Automatic Adjustments in Harrod

1. So far we have assumed that G_w doesn't change. But this assumption is not correct. In the business cycles also we know that during recessions, savings rate drops (and hence G_w drops) and in boom conditions, opposite happens. One way these changes may come about is due to a redistribution between profits and wages (in Keynes nominal wages are rigid and thus in recession income flows more towards wages while in boom the share of profits increases).
2. In the LR, savings rate (s) may change so as to change G_w to bring it in line with the G_n. If $G_w > G_n$ then there will be tendency towards depression which will tend to reduce the share of profits in the LR and hence savings will reduce, thereby lowering Gw (but this has serious flaws as in the LR wages are not rigid). Similarly in opposite condition, there will be boom and share of profits will rise. But there is a limit to which the share of profits can rise as is hypothesized in the form of inflation barrier by Joan Robinson (as workers will not let their real wages reduce due to inflation beyond a point).
3. Solow - Swan solution to the knife edge problem: If capital grows faster than labor i.e. $G_w > G_n$, labor will become scarcer, wages will increase and technological innovations will take place in labor saving techniques. Thus v_r will increase (since now more capital is required to produce same output) and this will lower G_w. If however, labor grows faster than capital then $G_w < G_n$, and labor redundancy will depress real wages and shift will be made towards labor intensive technologies. Thus v_r will fall and G_w will increase.

Graphical Illustration of Harrod

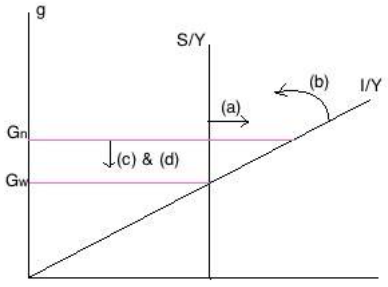


1. S is the savings line. It has 0 intercept and has the slope s. I_1, I_2 and I_3 are the warranted investment lines. We know $v_r = (\Delta K_r/\Delta Y)$. $\Delta K_r = I_r$. So $v_r = (I_r/\Delta Y)$. Thus $I_r = v_r.\Delta Y$ or $I_r = v_r.(Y_t - Y_{t-1})$. This means warranted investment will be zero if $Y_t = Y_{t-1}$ or the current income is same as previous period income. Thus I_1 is zero at $Y = Y_1$. Further, because $v_r > 1$ (assumption), the slope of the I_r lines will be more than the savings line (whose slope is s which is < 1).
2. Now the savings - investment equilibrium is achieved for the current period when the I_r line intersects the savings line. Thus $G_w = (Y_2-Y_1)/Y_2$. In the next period, Y_2 becomes the income for previous period and I_2 is the warranted investment line. New equilibrium is at Y_3 and so on. By similar triangles we can see that $(Y_3-Y_2)/Y_3 = (Y_2-Y_1)/Y_2$ and so on. Thus so long as same s and v_r are maintained G_w remains unchanged. But investment required in each successive period is higher to maintain the growth rate.

Relevance of Harrod for Developing Countries

Usefulness

1. In most developing countries the natural growth rate exceeds the warranted growth rate. This is generally because the population growth rates are high and savings ratio are low. This has the implications that - (a) the labor force is growing faster than capital accumulation which leads to chronic unemployment situation. (b) It also leads to greater plans to invest than the plans to save and hence inflationary pressures. Thus the simultaneous existence of high inflation and high unemployment in developing countries is not a paradox.



1. To correct the above situation where there is excess of required investment over planned savings, 4 steps can be taken to correct the situation. (a) we can try to increase savings rate. (b) we can try to reduce the capital output ratio by using more labor intensive technologies. (c) we can try to reduce the population growth rate. (d) we can try to reduce the labor productivity. Clearly options (b) and (d) are debatable.
2. It helps in setting overall policy targets and direction and helps in identifying focus aggregate areas. It helps in highlighting the problem areas roughly. For instance if the planned savings falls short of desired investment then we know inflation will emerge.

Limitations

1. Government: To assume away the role of government is to neglect the realities of developing countries. Due to structural problems, the governments in these countries must intervene.
2. Employment: Assumption of initial full employment is not valid in developing countries. Disguised and structural unemployment prevail. The growth of savings hardly is able to match the growth in labor force. Thus there is a need to bring down the capital - output and capital - labor ratios in developing countries to absorb the surplus labor but Harrod assumes constant capital - output ratio.
3. Capital - output ratio: It is not measurable with any satisfactory accuracy. Also in developing countries it is likely to change as they grow.
4. Sectoral relationships: Harrod model is aggregate in nature and ignores sectoral relationships. Thus it cant be used as a tool of detailed policy making because sectoral developments are essential in developing countries due to scarce resources.

5. Autonomous investment: Harrod excludes the autonomous investment in his formulation of warranted savings - investment equality to make way for the accelerator principle. But in developing countries autonomous investment is a key component of growth.
6. Constant s: In developing countries it is likely to change as they grow.
7. Labor - capital substitutability: Harrod assumes they can't be substituted. But in developing countries it is a reality that they are substituted.

Q. How is warranted growth different from natural rate of growth? Explain why Harrod's model is called 'knife-edge'. (2011, I, 20)

Domar Model

Domar vs Keynes

1. Domar extended the Keynesian framework but where he differed from Keynes was that while Keynes considered effect of investment only in the short run i.e. to increase the demand via the multiplier effect, Harrod also considered the long run effect i.e. creation of productive capacity for future use, along with the short run.

Objective

1. To determine that unique rate at which investment and income must grow so that full employment level is maintained over a long period of time i.e. equilibrium growth is achieved. This is possible if the additional demand generated by the investment is equal to the additional productive capacity created by it.

Assumptions

1. Economy starts from the full employment point.
2. Marginal output - capital ratio ($\sigma = \Delta Y/\Delta K$) is same as average output - capital ratio (Y/K).
3. Depreciation is zero (simplifying assumption).
4. Marginal propensity to save (s) is equal to savings rate in the economy (s) i.e. marginal propensity to save remains constant at all levels of income and the intercept term is zero.
5. Proportional tax rate is zero so that Keynesian multiplier $1/\{1-c*(1-t)\}$ is same as $1/(1-c) = 1/s$.
6. Savings = investment i.e. closed economy and balanced government budgets.

Model

Capacity Effect of Investment (I)

1. Increase in income (ΔY) depends on increase in stock of capital (ΔK) during a period and the output - capital ratio ($\sigma = \Delta Y/\Delta K$). So $\Delta Y = \Delta K.\sigma$
2. Now $\Delta K = I$ i.e. change in capital stock is nothing but investment. Thus $\Delta Y = I.\sigma$. To express as growth rate, we rewrite as $(\Delta Y/Y) = (I/Y).\sigma$ or $G_y = (I/Y).\sigma$ where G_y is the growth rate. Thus it is clear that growth rate will be higher if investment as a proportion of GDP is higher or output - capital ratio is higher.
3. To maintain the full employment, savings = investment. Thus $G_y = (S/Y).\sigma$ or $G_y = s.\sigma$.

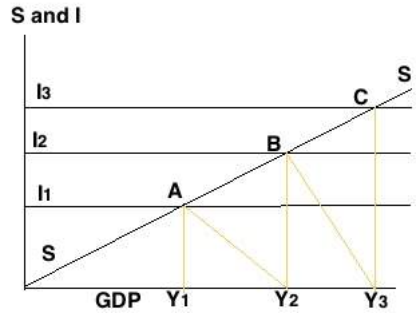
Demand Effect of Investment

1. Domar says that the growth in capacity output will be realized only if the rise aggregate demand due to rise in investment is able to match the increase in capacity. Based on Keynesian framework, $\Delta Y = (1/s).\Delta I$ where s is the marginal propensity to save.

Equilibrium

1. Since the demand effect of investment should be equal to the capacity effect of investment, $(1/s).\Delta I = I.\sigma$ or $(\Delta I/I) = s.\sigma$. Thus the steady state condition is if the rate of growth of investment equals the savings rate * capital - output ratio.
2. Since $(\Delta I/I) = s.\sigma$ and also $G_y = s.\sigma$ it follows, $G_y = (\Delta I/I) = s.\sigma$ in the steady state or rate of growth of investment is equal to the rate of growth of GDP is equal to $s.\sigma$.

Graphical Illustration



1. Let initial equilibrium be @ A. Now due to the investment I_1, the output capacity increases. Thus due to the productive capacity effect, the income increases to Y_2. $\sigma = (Y_2-Y_1)/I_1$. But the new equilibrium income level of Y_2 will be realized or maintained only if demand also increases and the new investment demand is I_2 and the new equilibrium is B. This is because @Y_2, the savings are higher and thus investment also has to be higher. But as soon as this happens, due to additional investment, productive capacity of the economy increases again and it moves to Y_3 and so on. The rise in income in each period will be $s.\sigma$.
2. If lets say $(\Delta I/I) < s.\sigma$ or sufficient growth in investment doesn't take place, steady growth with full employment can't be achieved and resources will fall idle and involuntary unemployment will arise. If $(\Delta I/I) = s.\sigma$ then in the next period the investment will have to be much more to generate sufficient demand so as to utilize the expanded production capacity.

Human Capital and R&D in Economic Growth

Solow's Model / Neoclassical model

Q. "There is one saving rate that is best in the sense of maximizing per capita consumption in steady state." Explain this statement and illustrate the idea graphically. (2010, I, 20)

Neoclassical vs Harrod Model

1. Factors considered: Neoclassical model considers 2 factor production function, L and K. Besides it also adds technology as a factor to the production function, but an exogenous factor. Thus $Y = A.f(L,K)$ is the neoclassical production function ($y = A.k^{\alpha}$ in Cobb Douglas form) where A is the technology level which is exogenously determined. Harrod Domar assumed technology to be constant and focused on capital only.
2. Substitutability of labor and capital: Harrod Domar assumed that labor and capital cannot be substituted. Neoclassical assumes they are substitutable and their relative proportion can vary.
3. Keynesian framework vs classical framework: Harrod Domar extend the Keynesian framework and consider the steady state to be one where the additional aggregate demand has to be equal to the additional productive capacity created by the investment. Neoclassical model only considers the role of supply side factors like capital, technology in determining the growth rate.
4. Diminishing returns to scale: Harrod and Domar focus solely on savings and higher rates of capital formation and ignore diminishing returns to scale. Neoclassical on the other hand assumes constant returns to scale at economy level but diminishing returns to scale to individual factors like capital and labor separately.

Types of Technologies

1. Labor augmenting technology: This refers to the technology which improves the productivity of labor. Since most of the technologies are of this type, the production function can also be rewritten as $Y = f(K, AL)$.
2. Neutral technological change This refers to the technologies which augment or increase the productivity of all factors equally. Thus the production function can be written as $Y = A.f(L,K)$ where A represents total factor productivity and is also called Solow residual.

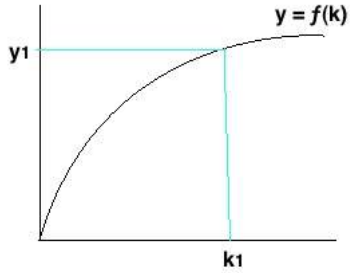
Steady State Equilibrium

1. It is defined as the state where growth rate in output equals growth rate in labor force equals growth rate in capital. so that per capita income and per capita capital are constant. Thus (ΔY/Y) = (ΔL/L) = (ΔK/K) = n where n is the growth rate of labor force.

Assumptions

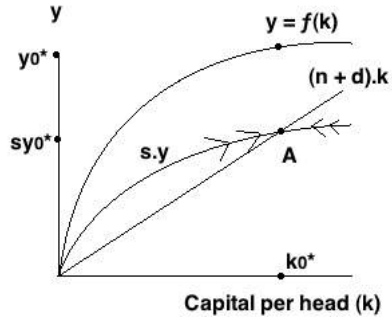
1. The production function is homogenous of order 1 or exhibits constant returns to scale. It shows diminishing returns to individual factors of production.
2. Marginal propensity to save = savings rate of the economy = constant. (like Harrod)
3. Planned savings is always equal to planned investment. (like Harrod)
4. Technology is exogenous.
5. We start from a full employment level.

Model



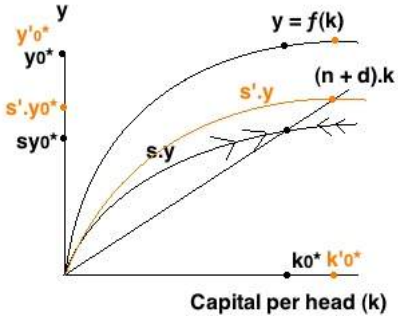
1. We have the production function as Y = A.f(K,L). Dividing throughout by L to get to per capita terms, (Y/L) = (A/L).f(K,L). Since the production function is homogenous of order 1, (Y/L) = A.f(K/L, 1). Let per capita income (y) = (Y/L) and per capita capital (k) = (K/L), thus, y = A.f(k) is the production function.
2. As can be seen from the figure, as the per capita capital increases, the per capita output also increases i.e. MPP_K is positive, but the slope decreases i.e. diminishing returns to scale are under operation.
3. Now net change in capital stock (ΔK) = Investment (I) = Savings (S) - Depreciation (D). Because marginal propensity to save is constant, we know S = s.Y and because depreciation occurs as a certain percentage of capital stock, D = d.K. Thus ΔK = I = s.Y - d.K or s.Y = ΔK + d.K.
4. Steady state condition: We can rewrite the above as s.Y = K.(ΔK/K) + d.K. Now in steady state, because (ΔK/K) = (ΔY/Y) = (ΔL/L) = n, we can say, s.Y = n.K + d.K or s.Y = (n+d).K. This is the steady state condition. Thus for the steady state growth, required investment (which is same as planned savings) growth is (n + d).K or the total investment must increase at this rate.
5. If the planned savings (sY) are greater than required investment ((n + d).k) then it will increase the capital per worker. This will increase the productivity per worker and hence economy will grow at a higher rate than the steady state rate. But this higher growth rate will taper off as diminishing returns to scale operate and it will return to steady state.

Graphical Representation of Steady State

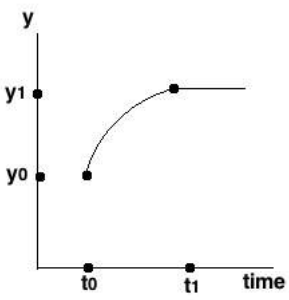


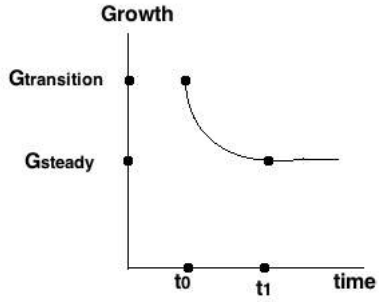
1. Our steady state growth equation can be written as, s.(Y/L) = (n + d).(K/L) or s.y = (n + d).k. Here (n + d).k is the required. A is the equilibrium point where planned savings = required investment. Let the economy be towards the left of A i.e. planned savings (s.y) > required investment. If this is the case, capital per head will increase and so will output per head. But due to diminishing returns to scale, as k reaches k_0^*, the required investment will become higher and planned savings relatively lower due to diminishing returns to scale thus bringing about their equality. Similarly if the economy is towards the right of A, then the required investment is higher than planned savings. So per capita capital will fall bringing both towards equality again. Thus whether we are to right of A or left of A, eventually we will come back to A.

Impact of Increase in Savings Rate



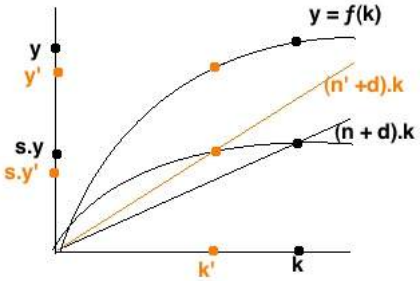
1. If the planned savings rate increases from s to s', we can see from the figure that the economy will reach steady state at a higher per capita capital level (k') and higher per capita income level (y'). But the overall long term growth in required investment remains unchanged at (n + d).k.
2. A higher rate of savings will increase the short term growth rate but ultimately the effect will die and original steady state growth rate will prevail in long run. But just as it is important to note that the steady state per capita income and capital have permanently increased, so it is equally important to note that in the transition period, a higher growth rate will be





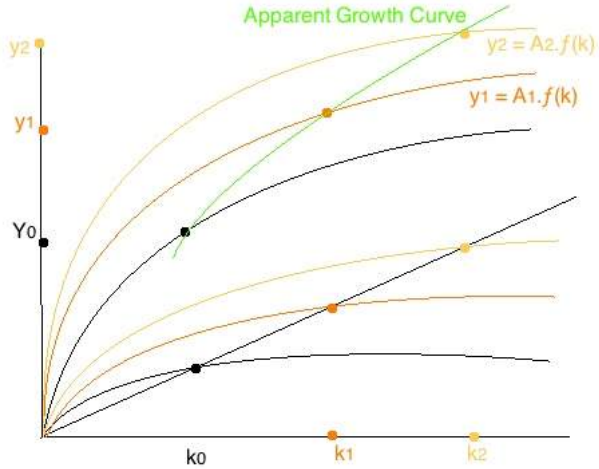
achieved (as can be seen from figures below).

Effect of Population Growth



1. An increase in population growth rate (n to n') causes the required investment line to shift up from (n + d).k to (n' + d).k. As a result the equilibrium per capita capital and income shift lower as the capital and output is spread among more people. This is because as per capita capital available reduces, the productivity per labor also reduces and so does the output per labor.

Long Run Growth and Technological Changes



1. So far we had assumed technology was constant or (ΔA/A) = 0. If it is not constant, then we can draw different production functions for each level of technology and determine the steady state conditions for each as in the figure above. In case of labor augmenting technological changes, we can simply replace n by n + t where t is the increase in productivity of labor due to technological changes.

Growth Accounting Equation
(ΔY/Y) = ø.(ΔK/K) + (1-ø).(ΔL/L) + (ΔA/A)

1. Differentiating the production function we get, $\Delta Y = f(K, L) . \Delta A + MPP_K . \Delta K + MPP_L . \Delta L$. Now dividing throughout by Y we get, $(\Delta Y/Y) = f(K, L) . \Delta A/Y + MPP_K . \Delta K/Y + MPP_L . \Delta L/Y$.
2. Now under constant returns to scale, a factor gets paid its marginal product. So $MPP_K / Y = ø$ = share of capital in GDP and $MPP_L / Y = (1-ø)$ = share of labor in GDP. Also $f(K, L) = Y/A$.
3. Substituting all these in above equation, we get, $(\Delta Y/Y) = (\Delta A/A) + ø.(\Delta K/K) + (1-ø).(\Delta L/L)$.

Key Conclusions of Solow's model / Neoclassical model / AK model

1. Convergence: Given identical tastes (i.e. preference for savings vis a vis consumption) and technology across countries, there will be an inverse relationship between the capital - labor ratio (per capita capital) and productivity of capital (inverse of capital - output ratio) so that poorer countries should grow faster than richer countries leading to convergence of per capita income though it may take different times for different countries. We can say v = K/Y = (K/L) * (L/Y) = k/y. Now given diminishing returns to capital (so that K/L doesn't rise in the same proportion as K/L) it can be sen that a higher K/L ratio will be associated a higher v. This means that capital rich countries will have higher capital-output ratio and hence their growth will be slower than capital poor countries. It can also be seen here that if there are no diminishing returns but constant returns to capital the a higher K/L ratio is offset exactly by a higher Y/L ratio so that the v remains same and hence no convergence.
2. Unconditional convergence: It is also called ß convergence i.e. poor countries grow faster than the rich without allowing for any other socio-economic or political differences between the countries. However, simply because there is no such evidence of unconditional convergence, we can't dismiss the neoclassical theory as the differences may be arising from different factors.
3. Conditional convergence: If we hold all other factors constant (like population growth, R&D expenditure etc.) then if the relation between per capita income growth and initial per capita income level is negative, it means a conditional convergence. However, simply because the sign of the relationship is negative, we can't attribute it to neoclassical theory of diminishing returns because say a lower income country may have a greater scope to catch up in terms of technology so that the sign will be negative but not because of diminishing returns. Moreover in developing countries agriculture (with lower productivity) may have a higher share in income. But as it gives way to industry, growth rate may be high but this higher growth rate is due to structural changes in the economy and not due to diminishing returns.
4. In the LR steady state, the growth of output is determined by the rate of labor growth in terms of efficiency units i.e. rate of labor force growth + rate of growth in labor productivity. Thus LR growth is independent of the savings rate and a higher S (and hence higher I) is offset by a higher capital - output ratio because of the diminishing returns assumption.
5. The level of per capita income in steady state, however, does vary positively with the savings rate.

Limitations

1. Economies of scale i.e. increasing returns to scale and investments in human capital not considered.
2. Neoclassical model assume that any increase in savings rate has only a temporary impact on the growth rate and doesn't impact the long run growth.
3. Neoclassical model leads to the conclusion of convergence of growth i.e. countries with same rate of population growth will converge to same long run growth rate (though the time of convergence may be difference) irrespective of the savings and also if they have access to same level of technology and savings, their steady state per capita income and capital would be same.
4. Neoclassical model explains that the long run growth of economies is possible via technological growth only but instead of dwelling into it, it considers it as an exogenous factor. Further if there is free flow of technological knowledge between nations, we should expect the rate of technological progress and hence the long run growth rates to converge.

Endogenous Growth Models / AK Model
Limitations of Neoclassical Growth Models

1. Economies of scale i.e. increasing returns to scale and investments in human capital not considered in the neoclassical model.
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Assumptions

1. Marginal propensity to save = savings rate of the economy = constant. Planned savings is always equal to planned investment. (like Harrod)

Model - AK Model

1. If we include those investments in human capital as well as physical capital in K only which have positive externalities then we will find that the diminishing nature of returns to capital will disappear and we can use CRS function. THus Y = AK where A is the inverse of capital-output ratio.
2. As usual we have ΔK = S - D = s.Y - d.K = s.AK - d.K. Now in steady state, we know (ΔK/K) = (ΔY/Y) which means (ΔY/Y) = (ΔK/K) = s.A - d. Thus if s.A > d, the economy will grow for ever and there will be no tendency to converge.

Model - Romer Model

1. It treats the technological change (A) or rate of population growth or both as endogenous factors. Thus $Y_t = f(K_t, N_t, A_t)$. Technology is not assumed to grow exogenously but grows endogenously when more investments are made by the firms. Such investments may be made in developing new technologies or may be made to copy or implement the already discovered ones. So they help in extending the use of new technologies.
2. Let the production function be Y = A . K^å . L^1-å . κ^ß where κ represents the knowledge capital and ß is the partial output elasticity of knowledge. Next by adding knowledge (κ) to the physical capital to get composite capital, we get Y = A . K^å+ß . L^1-å. To isolate the impact of human capital on growth, we assume A is constant.
3. Differentiating we get (∂Y/∂K) = (å+ß) . (Y/K) and (∂Y/∂L) = (1-å) . (Y/L). Also ΔY = (∂Y/∂K).ΔK + (∂Y/∂L).ΔL or ΔY = (å+ß).Y.(ΔK/K) + (1-å).Y.(ΔL/L). Thus we get (ΔY/Y) = (å+ß).(ΔK/K) + (1-å).(ΔL/L).
4. Now in steady state we have (ΔY/Y) = g and (ΔK/K) = g and (ΔL/L) = n. Thus we get, the steady state growth rate, g = (å+ß).g + (1-å).n or g = (1-å).n / (1-å-ß). Per capita output growth rate = (g - n) = (ß.n) / (1-å-ß). With ß = 0 or CRS, we get steady state per capita output growth = 0, but if ß > 0 we have positive per capita output growth in the steady state.

Model - Endogenous Technological Growth

1. It treats the technological change (A) or rate of population growth or both as endogenous factors. Thus $Y_t = f(K_t, N_t, A_t)$. Technology is not assumed to grow exogenously but grows endogenously when more investments are made by the firms. Such investments may be made in developing new technologies or may be made to copy or implement the already discovered ones. So they help in extending the use of new technologies.
2. But there is a difference. Relationship between Y and A is not the same as that between Y and K or Y and N. The relationship between Y and A doesn't suffer from diminishing marginal returns. This is because while the capital and labor can only be used exclusively, technology can be shared and hence generates positive externalities. Thus A doesn't suffer from DRS. These positive externalities of technology are also called social returns and when new technologies are successful, they are quickly adopted by other firms (learning by watching). Thus we can take A as independent of a firm and write the production function for an individual firm as $Y_{i,t} = f(K_{i,t}, N_{i,t}, A_t)$. Thus while for an individual firm the production function exhibits constant returns to scale, for the economy overall the production function shows increasing returns to scale.
3. Rate of technological change (ß) is a function of rate of investment. Thus we can write, ß = a + b (Δk/y) where (Δk/y) is the rate of investment as a proportion of GDP. Since investment = savings, we can write s = (Δk/y). Thus ß = a + b.s.
4. From the neoclassical model, Δk = s.y - (n + d).k. Ignoring the depreciation, we get Δk = s.y - n.k. If we now think the effect of technology, its impact would be to increase the productivity of labor and hence the rate of growth of 'augmented labor force' would be (ß + n). Thus we can write, Δk = s.y - (n + ß).k.
5. For steady state, Δk = 0. Thus s.y = (ß + n).k and since ß = a + b.s we can write that in steady state, s.y = (a + b.s + n).k. Thus in the steady state, the output per worker will grow at the rate ß which is a + b.s and hence dependent on savings. Thus an increase in savings rate will lead to increase in long run growth rate. Thus there is no tendency for growth rates to converge.

Policy Implications

1. While neoclassical growth theory predicts convergence, endogenous model predicts no such convergence due to increasing returns to scale from investments in technology and human capital. Increasing returns to technology and human capital ensure that the growth rates of rich countries will not fall. This may also imply that due to higher growth rates in rich countries themselves, capital may not flow from rich to poor countries.
2. It argues that higher savings rate will ensure higher long run economic growth and there is no mechanism for poor countries to catch up except to increase savings rate.
3. Since individual firms are not able to utilize full returns of technological changes, free market will lead to accumulation of less than potential benefits. So it argues for increased role of state. But agreements like TRIPS run contrary to increasing returns to scale.

Limitations

1. Like the neoclassical theory, it focuses on the supply side factors in determining growth and totally neglects the role of adequate growth in effective demand.

AK Framework

1. Y = AK is the production function. Here K doesn't suffer from diminishing returns and Y shows increasing returns (A > 1). In the steady state, ΔK = S - D = sY - ∂K. Thus (ΔK/K) = s.A - ∂. Thus if A > ∂/s, economy has the capacity to grow indefinitely.

Human Capital Framework

1. Production function: Let Y = A. (K^å) . (L^1-å). (H^ß) be the production function where H denotes the human capital and ß is the output elasticity with respect to human capital. Now adding human capital term to capital we get Y = A. (K.å+ß). (L^1-å).
2. Thus on differentiating we get ∂Y = [(∂Y/∂K) . ∂K] + [(∂Y/∂L) . ∂L]. Now ∂Y/∂K = (å+ß). Y/K and ∂Y/∂L = (1-å) . Y/L. Thus ∂Y = Y . [(å+ß).(∂K/K) + (1-å).(∂L/L)] or (ΔY/Y) = (å+ß).(ΔK/K) + (1-å).(ΔL/L).
3. Now we know ΔL/L = n = population growth rate and (ΔK/K) = (ΔY/Y) = g in steady state. Thus we can rewrite the above as g = (å+ß).g + (1-å).n or g = [(1-å) / (1-å-ß)] . n is the steady state growth.
4. It immediately follows that without the increasing returns to scale, ß = 0 and thus g = n so per capita growth would be zero without technical progress. With increasing returns to scale, ß > 0 and thus g > n and per capita growth is possible.

Q. How does Solow incorporate investment in education in the growth model to achieve long run growth? (2011, I, 20)

Q. Develop the idea that endogenous technological progress, driven by investment in human capital formation and R&D, offsets diminishing returns to physical capital. (2010, I, 60)

Q. Outline the main dimensions of human capital formation highlighting their relative significance in economic development. (2006, I, 20)

Lewis Model with Surplus Labor

Importance of Agriculture in Developing Economies

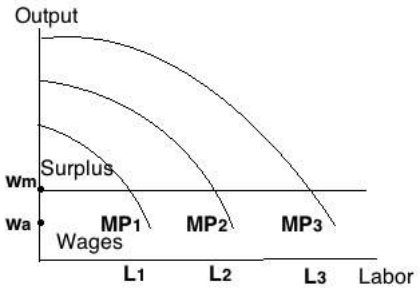
1. It is generally argued that classical economics prevails in agricultural sector (i.e. farmers don't respond to price incentives) and also that they have limited horizons so that if prices are increased they may actually produce less (backward bending supply curve). So agriculture prices should be kept low. Of course this is wrong and also neglects the market effect contribution of agriculture. It is often argued that a rise in prices doesn't lead to increase in overall agriculture produce (and marketable surplus) but merely shifts the cropping pattern. But empirical evidence shows that this is not true even though elasticity of supply is higher in developed countries. Moreover in LR elasticity of supply is very high.
2. Apart from contributing labor, agriculture also contributes capital in form of either voluntary savings or involuntary savings.
3. Higher labor - land ratio often leads to low productivity. In such a case even a small dose of capital input can raise productivity significantly.
4. In rural society most of the peasants are landless and marginal. So they tend to be risk averse. Even if they want to change, they are hampered due to serious lack of access to credit, technology, inputs etc. Empirical studies show that the elasticity of supply of agriculture is much higher with respect to the availability of farm inputs and public investment than to the prices. So we need to provide inputs directly to the farmers and build post harvest facilities given the risk aversion.

Urban Bias Against Agriculture

1. Holding down the agriculture prices to favor the industrial / urban sector.
2. Concentration of investment in industry. Also greater spending in urban areas on education, training, housing, nutrition etc.
3. Tax incentives and subsidies to industry. Tariffs and other form of protection to the industry which raises the prices of the agricultural inputs.
4. Overvalued exchange rates which keep the prices of industrial imports low but also restrict agricultural exports.

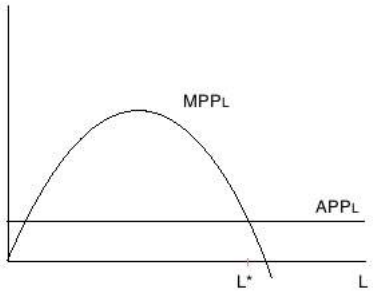
Structural Change in Agriculture

1. Initially the agriculture in developing economies is subsistence based. Then it develops into a mixed agriculture where a part of the crop is retained for subsistence and part is sold in the market. Finally it turns into modern agriculture where the production is entirely for the market and very often based on one crop. The state of dualism (where a subsistence agriculture sector coexists with a commercialized industrial sector) sets up incentives which are absent in a purely agrarian economy.
2. The emergence of an early export sector provides a powerful stimulus to the development and extension of money economy. Exports also create capacity to import which may further lead to more mechanization and specialization.



Assumptions

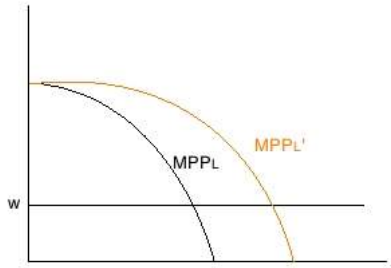
1. 2 sector dual economy. Agriculture which is primitive, suffers from disguised unemployment and industry which is modern. Disguised unemployment is the employment of labor which has got ≤ 0 or at least < subsistence wage MPP_L. This means that a release of labor from agriculture will not reduce the APP_L and may even raise it.



2. Agriculture is a sector which suffers from diminishing returns (because the total quantity of land is fixed). Thus huge amount of surplus labor exists in the agriculture in the form of disguised unemployment and which is willing to find employment in the higher paying industrial sector in want of higher wages. Thus there is a markup of wages in the industrial sector (Lewis took it @ 30%). The huge surplus labor from agriculture ensures that even when employment in industrial sector goes up, the wages don't go up.
3. All wages are consumed and all profits are saved and invested.
4. There is sufficient demand always to absorb all the additional production without any fall in prices.
5. Static technology.

Model

1. The model shows how the process of industrial expansion or capital accumulation is self sustaining and will absorb all the surplus labor from agriculture.
2. Let w_m be the wages in manufacturing (industrial) sector and w_a be the wages in agriculture. In period 1, with some initial investment total production will be the area under the marginal product curve (MP_1). Out of this only w_m has to be paid out as wages and rest is the surplus which is saved and all of it is reinvested in the economy. Labor employed in period 1 is L_1.
3. In the next period, the profit from period 1 will be reinvested, new capacity would be setup. As a result the marginal product will go up (from MP_1 to MP_2) and hence the demand for labor would increase. But the new labor can be hired at the same wage rate (surplus labor assumption). So L_2 amount of labor ($> L_1$) would be hired and new surplus would also be higher which would get reinvested in next period and so on. Thus this cycle continues at an increasing rate until all surplus labor is absorbed.
4. According to Lewis as industry expands, the share of profits in the national income will also rise. This is because - (a) Share of profits in industrial sector will rise (such is the case when successive MPP_L curves are drawn parallel to each other). But is it fair to assume that the MPP_L curves will shift out parallel to each other? If we assume CRS and increase the amount of capital (via reinvestment of surplus) then MPP_L of n^{th} worker earlier now becomes the MPP_L of $2.n^{th}$ worker. Therefore strictly speaking, successive MPP_L curves should be drawn keeping the vertical intercept constant and only varying horizontal intercept. In such a case the profits rise at the same rate as total wages and hence the share of profits in



industrial sector remains constant. (b) Share of industrial sector in GDP itself will rise. The increasing profits serve as an incentive to reinvest them in building new capacity as well as the source to finance it. The increasing profits are guaranteed by constant wages and sufficient demand which will prevent a fall in prices.

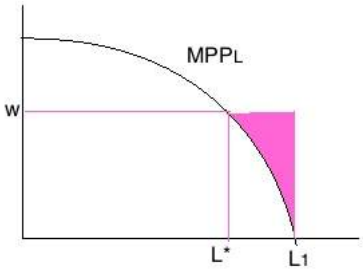
5. When the modern sector expands and workers earn higher wages there will be a rise in prices as the workers are paid out of the new money created. But when the formed capital is put to use output of consumer goods will also increase leading to a stabilization in prices. Further with the expansion of modern sector, not only do output and employment increase but also profits. As the share of profits increase the amount of investment being financed out of the created money diminishes and ultimately the increase in voluntary savings kills inflation.
6. The expansion stage comes to an end when there is no surplus labor left in the agriculture and now both industry and agriculture begin to compete for labor. @ this point agriculture is said to be commercialized and end of take off stage is defined.

Limitations

1. Mismatch between population and industrial employment potential: The capacity of the industrial sector to absorb the surplus labor will fail if the population growth rate is high which is the case in developing countries. Moreover the industrial employment potential may be hopelessly small to begin with and it may be worthwhile to increase opportunities in agriculture itself. In India, even as late as 2006, organized sector employed mere 9 mm labor force.
2. Technological changes: Lewis assumes that the surplus will not be invested in labor saving technologies or management techniques and thus increased surplus and investment will necessarily mean increased employment. This has not been the case empirically as is evident from the Indian experience. Since 1993-94, the output growth rate has been very high (specially from modern sectors) but organized employment has been falling at the rate of -0.33% p.a. On the other hand rural to urban migration has increased but this is merely shifting the surplus labor situation from agriculture to unorganized sector.
3. Demand deficiency: Lewis assumes that there will be endless demand for the produce which will prevent a fall in prices. This is clearly not the case in current economy. Moreover, today's economies are much more integrated with the world so that prices are influenced heavily by the international prices.
4. Neglect of agriculture: It neglects the importance of agriculture in sustaining the capital formation in industrial sector. It must be noted that as labor moves from agriculture to industry, their income will rise and hence demand for food grains (wage goods). If the supply of these food grains is not increased, their prices will rise which will lead to higher wages and hence a collapse of the model itself on its own feet. Also agriculture's role as a market for industrial goods is neglected but agriculture consumes a good part of the industrial output. If it doesn't grow then it will lower the growth in aggregate demand. But if agriculture grows, productivity and hence wages in agriculture itself will rise which will lead to a corresponding rise in industrial wages and the model will collapse.
5. Constant wage assumption: This is contrary to real life findings where trade unions are known to play significant role and wages are seen to be rising despite presence of surplus labor.

Assumption of 'Costless' Labor Transfer

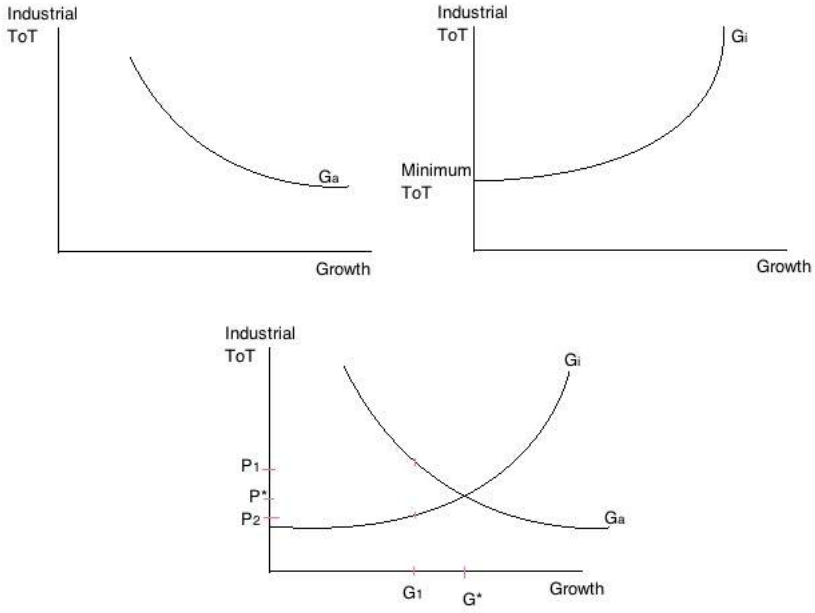
1. As wages per head rise in agriculture (due to migration of surplus labor from agriculture to industry) then we will need to increase the industrial wage rate also. If we assume that the marginal product of the labor was 0 in agriculture we must note that the marginal product of laborer was not zero. So the farmer remaining will now have to work harder and will thus require additional incentives to do so. This means that the transfer of labor from agriculture to industry will not be costless.



1. Thus in the above figure we see that if the state believes in the costless transfer assumption then the marginal cost of migration to society is zero but the private cost is w. So to correct the market failure the state will provide incentives such that L_1 labor is employed. But since wages paid out are w and assuming mpc = 1 out of wages, so there is a dissaving in the society to the extent of the shaded area. This will itself check capital accumulation.

Complementarity Between Agriculture and Industry

1. One of the limitations of Lewis is his assumption that the expansion of the capitalist sector is limited only by a shortage of capital so that any increase in prices and the purchasing power of the farmers is not a stimulus but an obstacle to industrialization. But this creates problems with deterioration in the market available for industrial output. Thus while we need lower agricultural prices to hold wages low, we also need higher agricultural prices to increase the food supply and also to let agriculture serve as a market for industrial production.



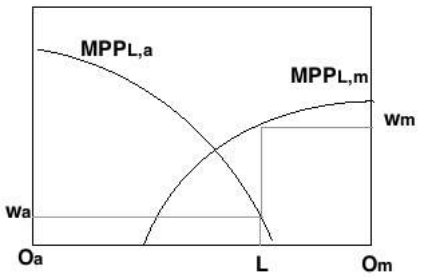
1. In the top left panel we can see how agricultural growth varies with industrial ToT. Agriculture's growth will be proportional to how much it invests relative to its output. Now assuming no inter-sectoral investments, the amount of investment done by agriculture will have to come entirely from its own savings which in turn will vary inversely with the industrial ToT (higher the price of industrial goods, lower the amount of investment).
2. In the top right panel we can see how industrial growth rate will vary with industrial ToT. This will have positive relation (since higher prices for industrial goods mean higher savings and thus higher investment). But there will be a minimum ToT since below that everything will be given in wages and there will be no profits left so that the industrial sector can't operate. But on the other hand there is a ceiling to industrial growth as well. The limit is when wages tend to zero as all industrial output is retained by industry itself for reinvestment.
3. In the bottom panel we show the equilibrium point of the two curves. If (for simplicity) we further assume that the income elasticity of demand for agriculture and industrial goods is 1, then @ a given ToT the rate of growth of agriculture output also represents the rate of growth of demand for industrial output and the rate of growth of industrial output also represents the rate of growth of demand for agricultural output. Thus it can be seen that @ any higher ToT (say P_1) industrial growth will be constrained by the agricultural growth (in the sense that lower agricultural growth @ higher ToT means lower demand growth for industrial output). Similarly @ P_2, industrial growth will be constrained by lower profits.
4. It can thus be seen that a growth in agricultural productivity (and a rightward shift in G_a curve) will both increase the industrial growth as well as its ToT (though subject to income elasticity of demand of industrial goods by agriculture) whereas a rightward shift in industry will increase its growth but only @ the expense of worsening ToT.
5. If lets say there are productivity improvements in industry but real wages also increase in the same proportion then there will be no shift in the G_i curve. In the Lewis model, a rise in real wages will tend to produce a shift down and unless G_a shifts outwards industrial growth will choke.
6. A final implication is that if agriculture is subject to diminishing returns then with time productivity of agriculture will fall (as growth is positive) which will shift the G_a curve left which will choke off even the industrial growth. Thus industrial growth will depend fundamentally on agriculture productivity enhancing innovations.

Indian Evidence (Kundu & Saraswati, 2011)

1. Proportion of life time migrants in India (on place of birth basis as well as on place of last residence basis) declined from 1961 to 1991 but has gone up since then. Proportion of women migrants is higher then men and has shown a similar trend.
2. Overall interstate migration declined pre reforms but increased post reforms. Over the decades Punjab and Haryana have witnessed increasing rate of interstate immigration. The rates of emigration from states like Bihar, UP, MP, Rajasthan etc. declined in the pre reform period but have gone up post reforms. Similarly the immigration into states like Gujarat, Maharashtra, has increased post reforms.
3. They establish that distress migration is becoming less with time and instead people are moving with their families, for studies etc. But this could also be a result of an automatic screen mechanism in operation as the urban centers become more hostile towards poor. This puts into question the WB's strategy of spatially unbalanced growth through 'dispersal of concentrations' and then reaching out to the poor through a human resettlement strategy (WB, 2009).

Q. "Expansion of high productivity sector absorbs more and more labor from subsistence sector indicating that dualism is a powerful tool of development planning."
Critically evaluate Lewis model of development in the light of the above statement and examine the relevance of the model for contemporary India. (2009, I, 60)

Todar-Harris Model



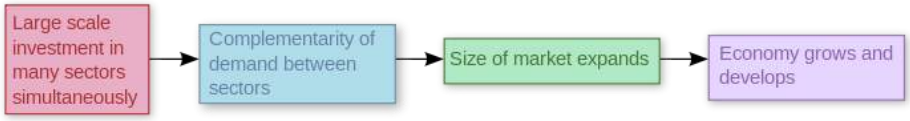
1. Classical economics argues that if there is unemployment, wages will be pushed down and ultimately whole labor will be employed. Similarly if manufacturing wages are higher than those in agriculture, more people would migrate from agriculture to manufacturing thus pushing manufacturing wages to the same level as agriculture.
2. But Todar explains why this may not work. In his model he assumes manufacturing employs first and after employing O_m-L labor the rest (O_a-L) is left for the agriculture. Among those employed in agriculture there would be some who would want to migrate to manufacturing attracted by the wage difference. But they will also assess their probability of getting a job in manufacturing. If the expectations of getting a job * wage in manufacturing > w_a, then they will migrate, otherwise not.

Balanced Growth

1. The balanced growth doctrine as envisaged by Rosenstein-Rodan was based on the indivisibilities on the demand side (minimum needed size of the market) and the supply side (lumpiness of capital) of the development. Due to these indivisibilities (and consequent chances of a market failure, a minimum scale of investment was necessary.
2. Later on Nurkse extended it to specify the path of development and the pattern of investment necessary to keep the different sectors of the economy in balance so that the lack of development in one sector doesn't impede development in others. This of course doesn't mean that all sectors should grow @ same rate but just that they should grow in accordance

with the income elasticity of demand for their products. Thus it has both horizontal (indivisibilities of markets, social capital) and vertical aspects.

Nurkse's Model



The process of economic development as per Ragnar Nurke's Balanced Growth Theory

Size of the Market

1. The size of a market assumes primary importance in the study of what induces investment in a country. The original idea behind this was put forward by Adam Smith, who stated that division of labour (as against inducement to invest) is limited by the extent of the market. According to Nurkse, underdeveloped countries lack adequate purchasing power. Low purchasing power means that the real income of the people is low, although in monetary terms it may be high. This includes the demand for capital as well.
2. The size of the market determines the incentive to invest irrespective of the nature of the economy. This is because entrepreneurs invariably take their production decisions by taking into consideration the demand for the concerned product. For example, if an automobile manufacturer is trying to decide which countries to set up plants in, he will naturally only invest in those countries where the demand is high.

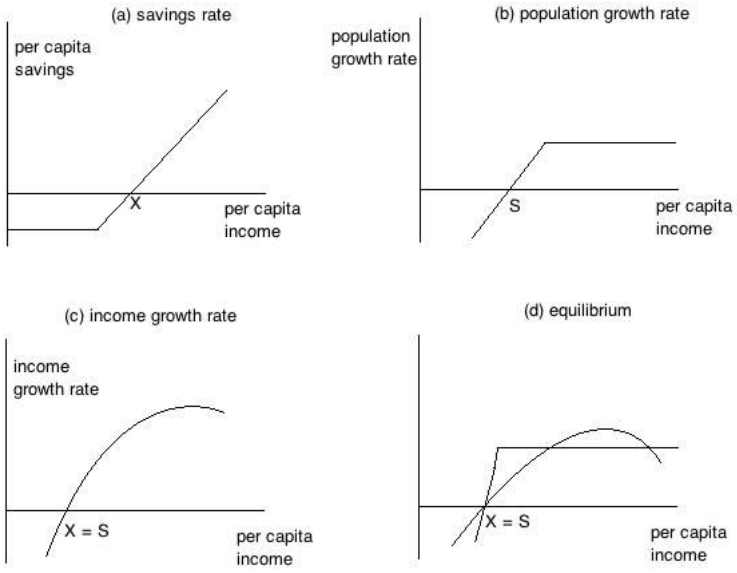
Determinants of the Size of the Market

1. Sales promotion: Private entrepreneurs sometimes resort to heavy advertising as a means of attracting buyers for their products. Although this may lead to a rise in demand for that entrepreneur's good or service, it does not actually raise the aggregate demand in the economy. The demand merely shifts from one provider to another. Clearly, this is not a long-term solution.
2. Money supply: Nurkse emphasized that Keynesian theory shouldn't be applied to underdeveloped countries because they don't face a lack of effective demand in the way that developed countries do. Thus, merely increasing the supply of money will not expand the market but will in fact cause inflationary pressure.
3. Population: Nurkse argued against the notion that a large population implies a large market.
4. Geographical area: Nurkse also refuted the claim that if a country's geographical area is large, the size of its market also ought to be large.
5. Trade barriers and transport costs: Due to high transport costs between nations, producers do not have an incentive to export their commodities. As a result, the amount of capital accumulation remains small. To address this problem, the United Nations recommends opening up their economies, lowering tariffs etc. for underdeveloped countries. However, Nurkse, as an export pessimist, did not agree with this view. He stated that financing through increased trade or foreign investments was a strategy used in the past - the 19th century - and it's success was limited to the case of the United States of America. In reality, the so called "new countries" of the United States of America (which separated from the British empire) were high income countries to begin with. This situation of outward led growth was therefore unique and not replicable by underdeveloped countries. In fact, if such a strategy of financing development from outside the home country is undertaken, it creates a number of problems. For example, the foreign investors may carelessly misuse the resources of the underdeveloped country. This would in turn limit that economy's ability to diversify, especially if natural resources were plundered. This may also create a distorted social structure. Apart from this, there is also a risk that the foreign investments may be used to finance private luxury consumption. People would try to imitate Western consumption habits and thus a balance of payments crisis may develop, along with economic inequality within the population. Another reason exports cannot be promoted is because in all likelihood, an underdeveloped country may only be skilled enough to promote the export of primary goods, say agricultural goods. However, since such commodities face inelastic demand, the extent to which they will sell in the market is limited.
6. Productivity: Nurkse stressed productivity as the primary determinant of the size of the market. An increase in productivity (defined as the output per unit input) increases the flow of goods and services in the economy. As a response, consumption also rises. Hence, underdeveloped economies should aim to raise their productivity levels in all sectors of the economy, in particular agriculture and industry. He reasons that an increase in productivity can create a virtuous circle of growth. Thus, a large scale investment programme in a wide array of industries simultaneously is the answer. The increase in demand for one industry will lead to an increase in demand for another industry due to complementarity of demands. As Say's Law states, supply creates its own demand.

Criticisms

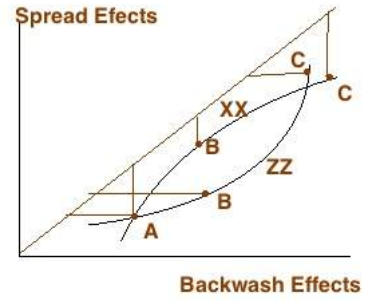
1. Amount of resources needed: Hirschman stressed the fact that underdeveloped economies are called underdeveloped because they face a lack of resources. Thus, to hypothesise that an underdeveloped nation can undertake large scale investment in many industries of its economy simultaneously is unrealistic due to the paucity of resources.
2. Cyclical downswings: Singer asserted that the balanced growth theory is more applicable to cure an economy facing a cyclical downswing. Cyclical downswing is a feature of an advanced stage of sustained growth. During conditions of slack activity in developed countries, the stock of resources, machines and entrepreneurs are merely unemployed, and are present as idle capacity. So in this situation, simultaneous investment in a large number of sectors is a well-suited policy and not in an under developed country.
3. Say's law: Another contention was Nurkse's approval of Say's law. However, Keynes has proved that Say's law is inapplicable.
4. Supplementary goods: Nurkse states that if demand for the output of one sector rises, due to the complementary nature of demand, the demand for the output of other industries will also experience a rise. However, it takes into consideration the situation of industries that produce complementary goods. There are substitute goods too, which are in competition with each other. If the state makes large scale investments in the coffee sector of a country, the tea sector will suffer.
5. Initial imbalance: Singer suggested that Nurkse's theory makes dubious assumptions about the underdeveloped economy that it begins from zero. But at any given moment, an imbalance already exists. So the logical step would be to take on those investment programmes which compliment the existing imbalance in the economy. Balanced growth will only perpetuate the imbalances.

Nelson's Model



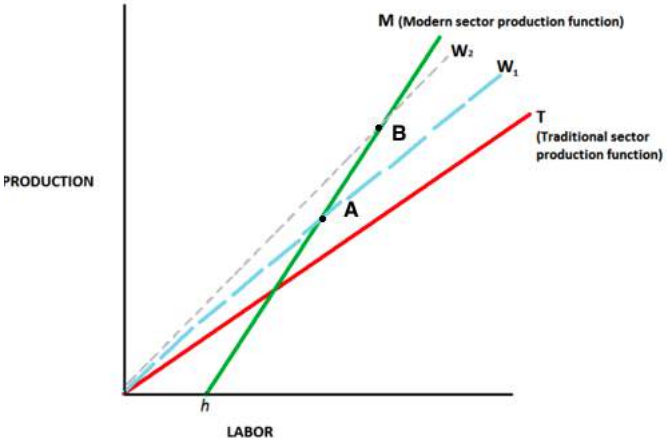
1. Below a certain threshold (subsistence income), there will be a dissavings (assumed negative constant here) and beyond that mps is constant so that per capita savings will increase with increase in per capita income. This can be seen in panel (a).
2. In panel (b) it can be seen that as the income rises, the death rate starts to fall and thus population growth rate increases until the death rate reaches a minimum so that population growth rate is maximum. Since Nelson's model was a SR model, he didn't take into account the effect of fall in birth rate with rising incomes but that can be incorporated easily without any loss of generality.
3. In panel (c) let the production function be Y = T. f(K, L) then we can see where S = X, population is stationary and also per capita savings is zero. So growth rate of national income will be zero. To the left of this there is dissavings and population is also falling, so national income will be falling as well. To the right of it both population is increasing as well as savings rate is positive, so national income will grow. However as population growth reaches a maximum and also savings as a % of income reaches a constant, the income growth rate tapers off. And in the absence of technical progress, law of diminishing returns will apply and eventually growth rate will fall.
4. In panel (d) let the initial state of economy be X i.e. both population and GDP growth rates be zero. If population growth rate > GDP growth rate => per capita income falls and per capita investment falls and thus growth falls and eventually population growth and GDP growth fall back to zero. So a big push is needed to push the economy beyond Z and this is called 'critical minimum effort'.

Libenstein's Model



1. Horizontal distance from the 45º line on the ZZ curve gives the backwash effects (income distorting). Vertical distance from the 45º line on the XX curve give the spread effects (income inducing). Thus unless the economy is taken to point C by a big push, it will fall back to A.

Rosenstein - Rodan Big Push Model



Hypothesis

1. Coordination failure: In subsistence economies, people don't have the purchasing power to buy new products. Thus the first factory will not be able to sell all its produce. Its own workers will consume only a part of the produce. Hence simultaneously multiple factories are needed. Similarly there are training costs, infrastructure costs. Thus there exist positive externalities which in absence of a coordinated approach may lead to a failure to achieve an optimal state.

Assumptions

1. The economy has N industries where N is very large so that an individual industry is unable to affect the economy.
2. There are 2 sectors - the traditional sector and the modern sector in each of the industry. The traditional sector is perfectly competitive (P = MC).
3. Only factor of production is labor.
4. In the traditional sector constant returns to scale prevail and each worker produces 1 unit as output and is paid 1 unit as wage. whereas in the modern sector increasing returns prevail. The modern sector needs a fixed minimum number of workers to begin production (F) but after it begins production, for each successive unit c workers are required where c < 1. Thus when the production increases, revenues increase by unity and wage bill by less than a unity (as F gets distributed over more workers and c < 1).
5. In the modern sector, there is only 1 firm per industry and can produce only 1 commodity so that there is no competition.

Model

1. It is clear that if the wage rate is w1 and if the firm estimates that by switching alone it would be above point A, it will switch. Since this decision will be made by firms in all industries, entire economy will switch to modern sector and the overall production will be much higher.
2. But if the wage rate is w2 and if the firm estimates that by switching alone it would be below point B, it will not switch. This is despite the fact that if all firms switch simultaneously, the economy may reach much above B but still a coordination failure will happen in the absence of state planning. This is due to the 3 indivisibilities.

Indivisibilities

1. Production function indivisibility: This occurs as a result of social capital or infrastructure.
2. Demand indivisibility: This happens as all switch to modern sector, aggregate demand rises to sustain all.
3. Savings indivisibility: This happens as if all switch to modern sector, productivity will increase and hence savings. Foreign aid can't be relied on.

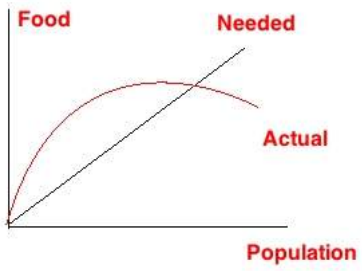
Need for Planning

1. If only some sectors are developed, their increased productivity will lead to increased demand for goods from other sectors. But the other sectors can't cater to them. In normal conditions, price signals should convey the incentives for investment in those sectors but in developing countries such conditions are distorted and institutions weak. So a centralized planning is needed. This is in addition to demand, savings and infrastructure indivisibilities.

Criticism

1. Difficulties in execution and implementation.
2. Lack of absorptive capacity: There may still remain some bottlenecks.
3. Historical inaccuracy: When viewed in light of historical experience of countries over the last two centuries, no country displayed any evidence of development due to massive industrialization programmes.
4. Problems in mixed economies: Conflicting interests of state and private sector.
5. Neglect of methods of production: Rather than capital formation, it is productive techniques which determine the success of a country in economic development. The big push model ignores productive techniques in its support for capital formation.
6. Shortage of resources in underdeveloped countries.
7. Ignores the agricultural sector: This is a gaping flaw in the theory, as in most underdeveloped countries it is this sector which is large and has labor surplus. Investments in agriculture need to go hand-in-hand with those in industry so as to stimulate the industrial sector by providing a market for industrial goods. If neglected, it would be difficult to meet the food requirements of the nation in the short run and to significantly expand the size of the market in the long run.
8. Inflationary pressures: It follows from the neglect of the agricultural sector that food shortages are likely to occur with industrialization. Though it would take time for investments in social overhead capital to yield returns, the demand would increase immediately, thus imposing inflationary pressures on the economy.
9. Dependence on indivisibilities: The emphasis of this theory on indivisibility of processes is too much, as investments need not necessarily be on such a large scale to be economic. Social reforms are ignored, which are vital if a country is to grow on the basis of its own resources and initiatives.

Malthus' Model

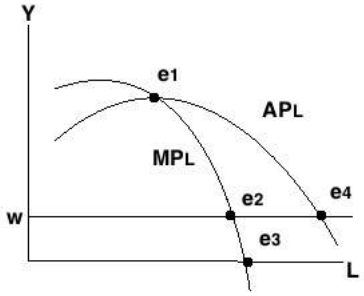


1. Subsistence wage: Ws is the subsistence wage i.e. the minimum wage at which labor can reproduce itself. If everyone gets W_s => food stock needed grows linearly.
2. Now let actual food available be as shown along with the food needed to maintain Ws. If actual food available is more than what is needed labor will reproduce faster and population will increase. If actual food available is less than what is needed labor will starve and population will decrease. So things in both cases will tend to converge at W_s.

Optimal Population - Simon

1. Simon argued that the ultimate resource is people - skilled, spirited and hopeful people. Thus there is more likelihood that one brilliant man is found in 4 mm men than 400 men. His empirical studies show that while the initial impact of population increase is negative, in the longer term the positive feedback effects that result from the stimulus of population growth to technological progress and other factors (that improve productivity) outweigh the negative effects.
2. A society under pressure from population growth may be expected to respond by finding new and more efficient ways of meeting given needs. This goes against Malthusian view. It is thus difficult to see how green revolution would have occurred without the need for it posed by the rising population. Population growth also provides a stimulus to develop social and physical infrastructure. Plus it can be a source of demographic dividend.
3. Therefore an overall judgement of the population growth - whether it is beneficial or not - depends on balancing the present and future impacts. Thus the choice of a social discount rate becomes important.

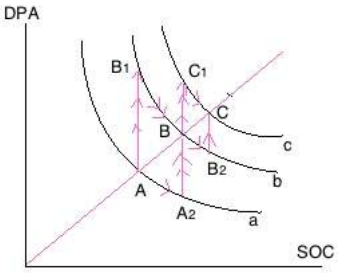
Optimal Population - Malthus



1. Points e_1, e_2, e_3 and e_4 can represent the optimal populations depending upon the goals of the society.

Unbalanced Growth

1. Hirschman contends that if the economy is to be kept moving ahead, the task of development policy should be to maintain disequilibrium. The sequence that leads away from equilibrium is precisely an ideal pattern for development. Balanced growth may not only be uneconomical (due to large amount of resources needed) but also may not provide right signals to make right investment decisions. Hence unbalanced growth is not only feasible but also required. The question he tries to answer is this: given a limited amount of investment resources and a series of proposed investment projects whose total cost exceeds the available resources, how do we pick out the projects that will make the greatest contribution to the development relative to their cost? And how should this 'contribution' be measured.
2. Hirschman distinguishes between 2 types of investment choices - substitution choices and postponement choices. Substitution choices are those where we have to chose one between projects A and B. Postponement choices are those where we have to chose which among A and B should we execute first. Hirschman mainly concerned himself with the postponement choices.
3. Hirschman argued that the fundamental problem in developing countries is not just scarcity of resources but also how to deploy whatever resources one has. For this we need signals from the economy. According to him, the question of priority must be decided on the basis of the strength with which the progress in one are will induce progress in the others. The projects with maximum linkages will thus create maximum amount of inducements and will give clearest signals with respect to the investment priorities.



1. The strategy of growth may take the 2 forms - (a) development through shortage of social overhead capital or what he calls 'development via shortages' (A - B_1 - B - C_1 - C), or (b) development through excess of SOC or what he calls 'development via excess capacity' (A - A_2 - B - B_2 - C). Both sequences create inducements and pressures conducive to development. In the first case, the country invests in direct productive activities. Direct productive activity expands and due to such investment, the pressure on SOC builds up. This induces investment in SOC. In the second case, social overhead cost expands, which reduces the cost of services and this induces investment in DPA. The cost of producing any unit of output any output of DPA is higher the more inadequate SOC of the economy (hence the negative slope of the curves). Also to produce any given amount of DPA a minimum level of SOC is required (hence it doesn't touch the axis). Which of the above two to chose if it is not possible to follow a balanced growth path (i.e. to always produce a given amount of DPA @ the minimum cost in terms of inputs required of both DPA and SOC together or the path A - B - C)?
2. Hirschman argues that the sequence which maximizes 'induced decision making' should be given preference. It is difficult to make a generalization because if SOC is developed first it will induce a lot of investment decisions about DPA and if DPA is developed first it will put pressure to induce an investment in SOC. Hirschman goes on to argue that development via shortages will 'compel' further investment while development via excess will merely 'permit' further investment, so development via shortages is likely to be a better choice. His argument is correct in the scenario when there is large scale resistance to social change so that merely permissive strategy may not induce investment. But this is equally wrong in the sense that such a development may actually take economy on a less efficient path (due to externalities) and also there is no good measure of the 'minimum required SOC' to undertake DPA investments. Moreover what is the guarantee that once DPA flows in SOC will be provided? One will have to rely on the government in this case and the credibility of the government shall matter.
3. Hirschman applies the same concept of 'induced decision making' while selecting projects within DPA. He thus favors selecting projects which have maximum backward and forward linkages. But unfortunately the developing countries have high dependence on agricultural where backward linkages are nonexistent and forward linkages are limited to mostly consumption and export. He thus suggests that it is best to induce industrialization. Thus the fact that industries possess greater linkages is a powerful argument in favor of industrialization. Underdeveloped countries should set up "last industries" first which are also termed as "enclave import industries". The most important advantage of these industries is that they set up backward linkages of practically infinite range and depth. Protection and subsidization of import replacing industries should come but at the correct later stage of development. Too early replacement of the industries would retard the process of industrialization as the country will lose advantages of backward linkages of enclave import industry. It is only when the market has grown to sufficiently full size the country should jump into production of imported goods.
4. As the underdeveloped countries face scarcity of resources the doctrine of unbalanced growth seems highly attractive. However this theory also is not free from defects due to the following reasons. It pays insufficient attention to critical question regarding the precise composition, direction and timing of imbalances. What is the optimum degree to which imbalance should be created in order to accelerate growth? This theory leaves too much to chance. There is little discussion on how to overcome discrepancies between private and social profitability of development projects. Agriculture has been neglected in this theory.

Reconciliation Between Balanced and Unbalanced Growth Strategies

1. One way to reconcile both is to treat unbalanced growth as a means of achieving the ultimate objective of balanced growth. Also unbalanced growth concentrates resources in a few selected areas creating shortages elsewhere. This can be consistent with the 'big push' version of balanced growth doctrine provided the scale of investment in the unbalanced growth is sufficient to overcome the indivisibilities as envisaged in the 'big push'.

Issues with Application of Marginal Rule in Allocation of Resources in a Developing Economy

1. It will work only if prices reflect social marginal costs which may not be the case due to imperfect markets and externalities.
2. Marginal rule only optimizes current welfare while in a developing economy a balance has to be kept between the current and the future welfare.
3. Marginal rule will give an optimal solution only when the initial distribution of resources within the economy was optimal.

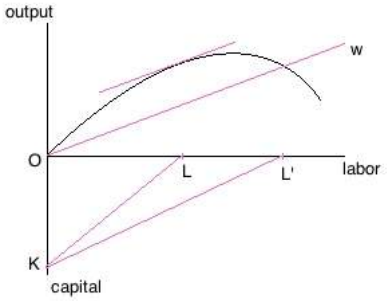
Economic Development in Developing Countries

Role of Investment in Developing Countries

Why do Developing Countries use Capital Intensive Techniques

1. There may not be a wide spectrum of profitable techniques to choose from. In such a case the production function of the profitable techniques may be L shaped and called Leontief production function. Many techniques are simply imported from abroad. MNCs may use a technique suited to maximize their worldwide profit and not according to the needs of the country.
2. The relative market prices of labor and capital may be distorted in developing countries and may not reflect their true relative scarcity. The old argument given in favor of subsidizing capital is that it will maximize output and savings and more labor intensive techniques will reduce output and savings because of higher wage bills. The output argument is clearly incorrect since if we use labor intensive techniques, the productivity of capital and thus total output will be higher (since more workers to work with same capital). Even empirical researches negate this hypothesis.
3. Although labor may be abundant in developing countries, it may not necessarily be cheaper to employ it because the productivity of labor may be low. Thus its efficiency wage (wage rate divided by the productivity of labor) may still be high.
4. Sometimes the labor intensive techniques may require a great deal of skilled labor which is lacking in the developing countries, while the capital intensive technique may only require small number of skilled labor.

Employment vs Savings



1. In the above figure let $Y = f(L)$ be the production function. Assuming constant wages, a ray from the origin and slope w gives us an employment level of L'. On the other hand, savings is maximized when the line parallel to the ray OW (such that slope remains w) is parallel to the production function (i.e. $MPP_L = w$). Thus it is argued that higher employment leads to lower savings.
2. If $Y = a.L - b.L^2$ then savings = Y - w.L (output - wage bill). Taking partial derivative and equating it to zero for the maximization condition, we get $L = (a - w) / 2b$ as the savings maximizing employment level. Similarly the level which maximizes employment is a / 2b and thus savings maximizing employment is < output maximizing employment. But this potential clash between savings and employment is based on many assumptions which can be questioned.
3. It assumes that the wage rate is given and is constant across the choice of techniques (implicitly it assumes an infinite supply of labor and thus constant wages like Lewis). But in developing countries most of the capital intensive technologies are imported and required skills which are scarce. Thus wages in the capital intensive techniques are higher than wages in the labor intensive techniques. Moreover production via labor intensive techniques may not require a dislocation of labor and hence no need to pay a premium over the traditional wage rate (Harris - Todaro model). Thus if we assume that the labor is paid their marginal product (which they should be according to neoclassical assumptions), then $S = Y - MPP_L = aL - bL^2 - (a - 2bL).L = bL^2$. Differentiating it we get $\partial S/\partial L = 2bL$ and clearly this is > 0 and there is no 'maximum' savings. So there is no conflict. Even if we just assume that wage falls with increasing labor intensity (and drop the strict assumption that it needs to be equal to the marginal product of the labor) and is equal to $f(L)$ where $f'(L) < 0$, we get $S = aL - bL^2 - f(L).L$ we can arrive at a result which narrows the 'conflict'.
4. It also assumes that all profits are saved while all wages are consumed. It also assumes that the consumption so incurred by labor is not productive i.e. doesn't aid in increasing its health and skills and thus doesn't aid in increasing future production. This is another fallacious argument.
5. It assumes that the unemployed don't consume anything (i.e. live on 0 expenditure!) such that the higher unemployment resulting from the use of capital intensive techniques doesn't lower community savings. This is clearly a most fallacious argument.
6. It also assumes that the government lacks the ability to tax and subsidize labor to reconcile the potential 'conflict'.

Why does savings rate increase as the per capita income of a country increases?

1. Per capita income rise is generally associated with more monetization of the economy and shrinking subsistence base. So savings are also higher.
2. As per capita income rises there is a fall in the growth rate of population. So savings increase even more.
3. Usual argument that mps for rich is > mps for poor.
4. Life cycle hypothesis because in high income stages a person saves while in low income stages he consumes more than he saves. If each successive generation wishes to consume more in retirement (so as to maintain its level of consumption constant which is higher than its previous generation's) then it must save more.

Reasons for Unemployment in Developing Countries

Lack of Wage Goods (Vakil, Brahmananda)

(a) Proposition

1. The basic reason for unemployment in developing countries was the deficiency of availability of essential consumer goods or the wage goods.

(b) Model

1. The disguisedly unemployed people who are employed in agriculture or the explicitly unemployed, when engaged in modern sector or public works, will have to be supplied with wage goods so that newly employed labor can subsist. If the wage goods are not sufficiently available then there new employment can't be sustained.
2. Wage goods gap: As people are engaged in new industries, their incomes will increase. So will the income of people engaged in agriculture (due to lessening of burden there). So consumption of wage goods is going to increase. If the new industries are not producing wage goods, a deficiency of wage goods or the wage goods gap is going to arise even when accounting for release of wage goods consumed by people when they were disguisedly unemployed.

AK Sen's Contribution

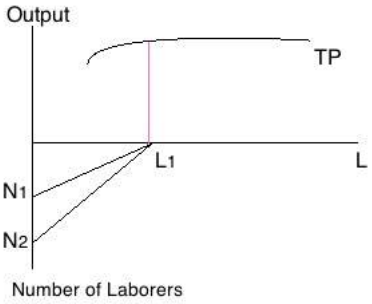
1. According to Sen, the quantum of wage employment in a country depends on the total supply of wage goods on one hand and the real wage rate on other. If E represents the quantum of employment which can be provided, M represents the supply of wage goods and W the real wage rate then E = (M/W). Thus if M is less than what is required to supply all labor force, all workers can't be fully employed.

Other Factors

1. Lack of capital stock.
2. Use of capital intensive techniques.
3. Inequitable distribution of land.
4. Neglect of role of agriculture in employment generation.
5. Lack of infrastructure.

Disguised Unemployment

AK Sen's Analysis on Disguised Unemployment



1. He distinguished between marginal productivity of labor and marginal productivity of laborers. He explained that it is the marginal productivity of laborers which is zero over a wide range and not the marginal productivity of labor. In fact marginal productivity of labor is zero just at the margin.
2. If say a farm needs 40 man days of work and in a family there are 4 people. Then each will work for 10 days and the combined family will not put an additional day of work. Thus marginal productivity of labor is zero only at the margin. But there are more individuals than needed to do the work, so work will be shared among them and each will work less. Thus marginal productivity of laborers is zero over a wide range. Even if we withdraw 2 of them, remaining two will work for 20 day each and total output will not suffer.

Employment Strategies in Developing Countries

Growth Oriented Strategy

1. This was the strategy followed by Mahalanobis, Lewis, Harrod. It believed that it is hard to generate employment in India without development of capital goods.
2. But its main drawback is that it treats labor and capital as perfect complementary factors. It also doesn't sufficiently recognize the importance of wage goods constraint for generation of employment opportunities. Also the employment generation of modern industrial sector has been negligible.
3. Another drawback is that it ignores the possibility of absorbing labor productively in agriculture. Focus on agriculture could have led to better development as green revolution showed. Thus it ignored all agriculture related development.

Wage Goods Strategy

1. It neglects capital goods industry. In developing countries availability of both wage goods and capital goods forms a constraint. We can't ignore any one.

Labor Intensive Technologies Strategy (Singer, Myrdal)

1. They attribute the unemployment problem to use of capital intensive technologies as despite rapid growth commensurate growth in employment has not been seen. These capital intensive technologies not only fail to create new employment but also destroy traditional employment (backwash effect). Moreover it accentuates the inequality situation.

Rural Public Works Strategy (Dandekar, Rath, Minhas, Bhagwati)

1. They consider regular development as incapable of alleviating the problem of unemployment. It started on a regular basis in 1977-78 as a part of 'Food for Work Programme' and thus sought to alleviate the constraint of food grains / wage goods standing in the way of developmental works.
2. But another view is that it can at best be an interim strategy and a long run solution to unemployment can only be achieved through economic development.

Myrdal's Circular / Cumulative Causation Model

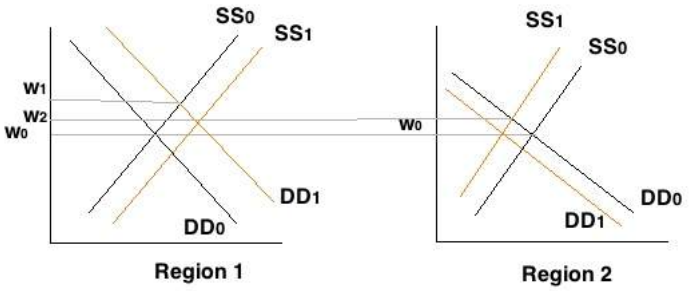
Dualism

1. Dualism can be of 3 types - geographic (spatial distribution of the gap between the per capita incomes), social (gap between the social customs prevailing in the rural subsistence sector and the urban monetized sector) and technological (gap between the technologies used in the rural subsistence sector and the urban monetized sector).
2. If the basic origin of dualism is the introduction of money into a subsistence barter economy and the development depends upon the penetration of the money economy then development must contend with dualism. Thus the introduction of money economy tends to change social customs and traditional relationships. To this extent social dualism is an inevitable consequence of development and not necessarily a cause of backwardness. Similar is the case with technological dualism. Such types of dualism do create problems of their own (for instance use of capital intensive technologies restrict the level of employment) but are not a 'reason for backwardness'.
3. But often there can be many cases of negative externalities associated with dualism. For instance while use of machinery may be preferable from a private person's point of view, it may not be so from the society's point of view. In such a case the society needs to intervene and ensure proper pricing of such technologies so as to reflect their social costs.

Objective

1. It seeks to explain the persistence of geographical dualism or the spatial differences in the economic development by highlighting the forces of divergence. He intends to show that - (a) geographical dualism is responsible for the backwardness of some areas (as opposed to being an innocent inevitable consequence of development), and (b) it leads to slow down of the whole economy. He insists that contrary to the popular perception about stable equilibriums, there exist forces which tend towards further disequilibrium.

Model



1. Let initially all the regions had same stage of development and the wage level was w_0. Now lets say there is an exogenous shock and the demand for labor in region 1 increases. So DD_0 goes to DD_1. Myrdal goes on to show that despite full labor and capital mobility, contrary to popular perception the equilibrium between the two regions will not be restored (contrary to the neoclassical theory). Myrdal uses the multiplier - accelerator mechanism producing increasing returns in the favored region.
2. Following the exogenous shock the wages in region 1 will rise to w_1 on the same supply curve (SS_0). This difference in wages attracts migration of labor from region 2 to region 1. So the supply curve in region 2 shifts to left (SS_0 to SS_1) and that in region 1 shifts to right (SS_0 to SS_1). Now classical economics will argue that the migration will continue until the wages in both regions become the same (w_2).
3. Backwash effect: But this is not the case because due to loss of labor, the region 2 has also lost demand or market, lost human capital, lost entrepreneurs and hence demand curve also shifts from DD_0 to DD_1 and the new wages in region 2 are less than w_2. This is Myrdal's backwash effect as it persists. Myrdal considers the backwash effects to be stronger than the spread effects (congestion, expansion of industries, pollution, rising costs, government).
4. Role of externalities: In free market capital moves to places where prospective returns are highest and this will be the region where demand is buoyant. Capital, labor, entrepreneurship all tend to move together. Positive externalities will also favor the movement of capital towards the developed region. Production in such areas is subject to increasing returns and thus to maintain full employment the developed area must export. On the other hand, production in the backward regions is subject to diminishing returns and so it must import. Eventually the exports of the developed region will increase and those of underdeveloped region decrease and thus even the benefits of the trade will accrue to the developed

nation in this case.
5. Such is the strength of these backwash effects that Hirschman even suggested that the backward regions may be tempted to become independent nations on their own. But this will also weaken substantially the spread effects and hence on the balance Hirschman argues against nationhood for backward regions. Instead the nation must provide more autonomy (increased federalism). He calls the backwash effects of Myrdal as polarization effects and the spread effects as the trickle down effects.

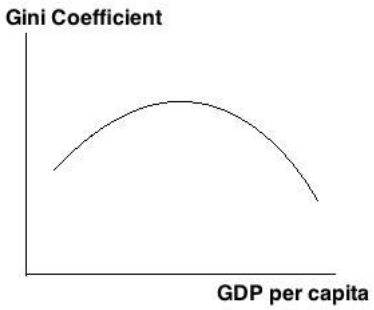
Myrdal's Model in International Flows

1. Trade: The role of free trade as in the case of within the country can also be extended to the case of trade between the countries. Developing countries produce primary products. These primary products have inelastic income and price demands. This puts the developing countries at a disadvantage in terms of trade as well as balance of payment.
2. Technological progress: Due to technological changes, there is a tendency for the efficiency wage (money wage in relation to productivity) to fall in developed countries thus giving further comparative advantage to developed countries.
3. Capital flows: Due to higher risks, developing countries are net exporters of capital. However, it can be argued that in practice due to favorable treatment given to FDI and multilateral capital inflows, developing countries are net importers of capital.
4. Labor flows: Brain drain leads to loss of human capital. But it can be argued if the human capital so lost could have been gainfully employed in the developing countries in the first place. Moreover unskilled labor also migrates.

Kuznets Model
Scope of study

1. He covered the time series data (for individual countries) as well as cross sectional data (for regional inequalities).

U Shaped Curve



1. Regional inequalities first rise with the level of development and then decline. This pattern is not too hard to explain. Very poor countries are uniformly poor. Regional differences first emerge as a result of some favorable shock to one set of regions. Once the difference emerges Myrdal's backwash effect accentuates it. Spread effects will be weak. However as countries grow richer, spread effects will become stronger and backwash effects weaker and inequalities reduce. This was established by his time series study.
2. Same can also be explained by Lewis model where the industrial sector first develops by higher capital accumulation.
3. Kuznets ratio: It is a measurement of the ratio of income going to the highest-earning households (usually defined by the upper 20%) and the income going to the lowest-earning households, which is commonly measured by either the lowest 20% or lowest 40% of income. Comparing 20% to 20%, perfect equality is expressed as 1; 20% to 40% changes this value to 0.5.

Criticisms

1. Critics of the Kuznets Curve theory argue that its U-shape comes not from progression in the development of individual countries, but rather from historical differences between countries. For instance, many of the middle income countries used in Kuznets' data set were in Latin America, a region with historically high levels of inequality. When controlling for this variable, the U-shape of the curve tends to disappear.
2. The east Asian miracle has been used to criticize the validity of the Kuznets curve theory. State-led manufacturing and export grew quickly and powerfully. Yet simultaneously, life expectancy was found to increase and population levels living in absolute poverty decreased. This development process was contrary to the Kuznets curve theory. Many studies have been done to identify how the EAM was able to ensure that the benefits of rapid economic growth were distributed broadly among the population, because Kuznets' theory stated that rapid capital accumulation would lead to an initial increase in inequality. Joseph Stiglitz argues the East Asian experience of an intensive and successful economic development process along with an immediate decrease in population inequality can be explained by the immediate re-investment of initial benefits into land reform (increasing rural productivity, income, and savings), universal education, and industrial policies that distributed income more equally through high and increasing wages and limited the price increases of commodities. These factors increased the average citizen's ability to consume and invest within the economy, further contributing to economic growth. Stiglitz highlights that the high rates of growth provided the resources to promote equality, which acted as a positive-feedback loop to support the high rates of growth.
3. Statistical evidence shows income distribution across countries with low as well as medium income becoming similar.

Kuznets Curve and Trade Liberalization

1. A trade liberalization-versus-inequality graph has a measures trade openness along the x-axis and inequality along the y-axis. Dobson and Ramlogan determine trade openness by the ratio of exports and imports (the total trade) and the average tariff rate; inequality is determined by gross primary school enrollment rates, the share of agriculture in total output, the rate of inflation, and cumulative privatization.
2. By studying data from several Latin American countries that have implemented trade liberalization policies in the past 30 years, the Kuznets curve seems to apply to the relationship between trade liberalization and inequality (measured by the GINI coefficient). However it must be noted that many of these nations saw a shift from low-skill labour production to natural resource intensive activities. This shift would not benefit low-skill workers as much.
3. Although their evidence seems to support the Kuznets theory in relation to trade liberalization, Dobson and Ramlogan assert that policies for redistribution must be simultaneously implemented in order to mitigate the initial increase in inequality felt.

Q. What do the following terms signify in structural transformation and growth?

(i) Kuznets' U-shaped curve (2011, I, 20)

(ii) Environment Kuznets curve (2011, I, 20)
Concept

1. It is the inverted U curve with per capita income in x axis and pollution on y. In general, Kuznets curves have been found for some environmental health concerns (such as air pollution) but not for others (such as landfills and biodiversity). It is valid for emissions like NO_x, SO_2, CO, RSPM, lead etc. but not for CO_2, energy use.
2. It advocates the principle that the solution to pollution is more growth. It became the basic principle of Kyoto Protocol. But recently the traditional "inverse U" shape as actually being an "N" shape, indicating that pollution increases as a country develops, decreases once the threshold GDP is reached, and then begins increasing as national income continues to increase. While such findings are still being debated, it could prove to be important because it poses the concerning question of whether pollution actually begins to decline for good when an economic threshold is reached or whether the decrease is only in local pollutants and pollution is simply exported to poorer developing countries.

Limitations

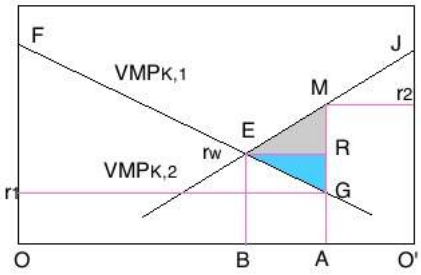
1. If the impact of pollutants is local, then a society will be forced to take care of it even at lower stages of development. But if the impact is distributed over entire globe, the society will not take care of it and EK Curve will be more pronounced.
2. It may be the case, that regulation in relatively wealthy countries simply shifts the production and pollution to less-regulated, poorer countries; if this were true, the total size of the negative externalities of production remains the same or is larger, though in the wealthier country an EKC appears to have been obtained.
3. Another study shows that both rich and poor nations tend to focus equally on environment. But since developing economies are growing at a faster rate, despite reduction in pollution intensities, overall pollution grows.

(iii) N-shaped Kuznets curve in the long run (2011, I, 20)

1. This arises in economies which make a transition from industrial to post-industrial phase i.e. tertiarization. The initial wave of development as the country (from agriculture to industrial) is accompanied by rising inequality. The large difference in income between the agricultural and industrial sectors results in growing inequality. As the country continues developing, there are few remaining farmers, all workers gain in bargaining power, and inequality falls.
2. But as it develops more, the inequality started to rise again. This is due to the gap between the skilled and unskilled workers. Knowledge and human capital becomes an improving factor, research, management practices, advisory and financial services drive growth but not everyone is skilled. So income gains are imbalanced again and economy-wide inequality continues to grow.

Q. Critically evaluate Kuznets inverted U shaped curve hypothesis of income distribution. Does it hold good for less developed countries as well? (2009, I, 20)

Role of Multinationals
Static Welfare Analysis



1. Initially let OA be the capital invested in nation 1 and O'A in nation 2 (@ different VMPK r_1 and r_2). Now international capital flows are allowed (via MNCs) so we can see capital will flow from nation 1 to nation 2 such that VMPK become equal in both (r_w).
2. Initially production in nation 1 = area OAGF. Post capital flows, production in nation 1 = OBEF. Thus there is a loss of area ABEG. But there is a gain of area ABER because of the rent received for capital invested in nation 2. Thus the net gain to nation 1 is the area shaded in blue. But it can be seen that while the rental for capital of nation 1 increases, the wages decrease. This is because labor has not migrated but capital has such that each unit of labor now has less capital to work with and hence its VMP_L is lower which means its wages are lower. That is why labor in US opposes investments abroad.
3. Similarly initially the production in nation 2 = O'AMJ. Post capital flows the production in nation 2 = O'BEJ. So the gain is area BEMA. But out of this BERA is given to A as the rent for the capital. So net gain to nation 2 is area shaded in grey. The effect on the rental and wages in nation 2 will be opposite of nation 1.
4. There are also effects on tax collections since tax on the capital which migrated will now be collected in nation 2 and only the residual in nation 1. Furthermore it is often cited that outsourcing or capital outflows reduce the number of jobs in the home nation. But those jobs would anyways have been lost to foreign competition since nation 1 didn't have comparative advantage in those sectors. A similar analysis can be done for international migration of labor.

Choice of Technology by MNCs

1. The technologies used by MNCs are unlikely to be very flexible (i.e. suited to the labor abundance in developing countries) because they tend to maximize their global profits and not produce according to the needs of the country. Their processes and management is suited to their global practices only. However the ancillary industry which may develop around the MNCs may use higher labor intensive techniques. Whether they are better or worse than local firms in adapting is mixed.

Role of International Trade
Prebisch - Singer Model

1. Their belief was that international trade leads to worsening of (commodity) ToT for the developing nations. This was based on the data published by UN showing that £ ToT improved from 100 in 1870 to 170 in 1938. Based on his model he argues for the case of protection and import substitution.

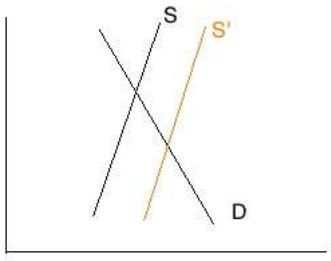
(a) Assumptions

1. Engel's law: As Y rises, the demand patterns shift away from primary to manufactured goods. Thus income elasticity of primary goods < income elasticity of manufactured goods.
2. Elasticities of supply in primary products is lower than manufactured products.
3. DCs' export markets are monopolistic while LDCs' export markets are in perfect competition.
4. Trade unions are weak in LDCs.
5. Technological changes constantly evolve substitutes for primary products.
6. Capacity to import is the measure of economic strength and ToT are most important determinant of import capacity.
7. Capital flows are absent or constant i.e. higher capital inflows can't cancel out the effect of a worsening trade balance.

(b) Model

1. Elasticity argument: Developed countries have higher price and income elasticities. So if world income goes up by 1%, developed countries benefit more. Similarly if prices go up by 1%, developed countries benefit more. Also because their supply elasticities are low they are unable to take advantage of business cycles. Hence they suffer during cyclical swings. Thus we see that if ToT are assumed to be constant, then international trade leads to slowing down of developing countries. If ToT is allowed to vary, it will thus vary against the developing countries.
2. Technology argument: Technological changes eliminate the market for primary products which are the traditional exports from developing countries. Thus there is a systematic synthetic substitution and worsening of ToT for LDCs. As a result of technology developments there is a shift towards lower isoquants i.e. less raw materials used by DCs in their manufactured products.
3. Transfer of benefits argument: Developing countries exports are usually labor intensive. But labor unions are weak in developing countries. So if there is any productivity enhancement, the share which flows to labor in the developing countries is very less and most of it is passed on to the developed countries in terms of cheaper price.
4. Monopoly argument: DCs having monopoly in their export markets can charge higher prices for it while LDCs can't.
5. Foreign investment argument: MNCs take away all the profits and exploit resources.

(c) Export instability problem of developing countries



1. Apart from the secular deterioration of ToT developing countries also face large SR fluctuations in their export prices and earnings. This is due to the inelastic and unstable nature of both demand and supply of their exports.
2. Demand for primary products is price inelastic because individual households in developed countries spend only a small part of their income on such products. So that when the prices of such products change they don't significantly alter their consumption. Demand for raw materials is inelastic because of lack of substitutes fofr many of them. And the demand is unstable because of the business cycles in the developed countries. The net result is a magnification in the price changes of primary products.

(d) Criticism

1. The study leaves out the quality improvements in £ exports. It is well known that quality improvements in manufactured goods are higher than in primary goods.
2. The study ended in a depression year when the price of raw materials was abnormally low.
3. The data used FoB prices for UK exports and CIF prices for imports. Naturally the decline in ocean transportation costs and insurance costs would reduce the prices of imports only and not exports.
4. Not all raw materials are same and hence can't be expected to move together. For instance ToT of oil producers have gone up.
5. LDCs also export manufactured products and DCs also export primary goods. So a generalization should be avoided.
6. Monopolistic markets in DCs not supported empirically.
7. Engel's law may be applicable to food but not to other raw materials.

(e) Role of Adam Smith in the center - periphery models

1. He gave the concept that there are many sectors (specially industrial) which face increasing returns while there are others (specially agriculture) which face diminishing returns. Developing countries tend to specialize in sectors having diminishing returns while developed countries specialize in sectors having increasing returns.
2. He argued one great source of increasing returns is division of labor (labor specialization). This results from learning by doing, saving of costs between jobs switching and incentive to employ greater number of machines. But the ability to specialize depends on the size of the market. If the market for a product is too small, it may simply not be worthwhile to specialize in that. (This was a central axiom in his model. He argued that the size of the market is limited by trade restrictions and hence free trade is preferable.)

Seer's Model

1. Let the import function of center be $M_c = A + B.Y_c$ and import function of periphery be $M_p = a + b.Y_p$. Now for trade to balance, $M_c = M_p$ or $A + B.Y_c = a + b.Y_p$. This gives us $(Y_p/Y_c) = (A-a) / b.Y_c + (B/b)$. Now we are interested in what happens to this ratio as time goes by. If r be the growth rate of center, we can write $Y_{c,t} = Y_{c,0} . e^{rt}$.
2. This gives us $\partial(Y_p/Y_c)/\partial t = -r * (A-a) / b . Y_{c,0} . e^{rt}$. Now the denominator is positive, so if (A-a) > 0, the gap between the income of periphery and the income of center will widen with time. Now a is the constant term in the import demand function of the periphery and because its import demand is elastic, a will be negative. On the other hand because the import demand of the center is inelastic, A will be positive. Thus A - a will be positive and income gap between center and periphery will only increase with time.

Krugman's New Economic Geography

1. In the framework of a constant tussle between the centripetal forces (backwash effects) and the centrifugal forces (spread effects), transport costs play a vital role. As in Myrdal, consider 2 identical regions. If the transport costs between them are too high, both regions will be more or less self sufficient (activity will be widely dispersed and oriented towards serving local markets only because it is to costly to export).
2. Now suppose the transport costs fall. Those regions with some small initial advantage or merely geographical or historical accident will tend to capitalize on that advantage. They will begin to export to the less advantaged region and due to external and internal economies, a small initial difference will soon lead to a much larger difference. Forces of cumulative causation (backwash effects) will be stronger and divergence will increase.
3. Now suppose the transport costs fall further. Peripheries enjoyed the advantage of lower labor costs if nothing else. Now it may become worthwhile to shift some of the production to the periphery from the center and thus spread effects will start to become more important. This can be seen in the pattern of globalization today where supply chains are so intertwined.

Comparative Advantage and Growth

1. Producing according to the comparative advantage may ignore the dynamic benefits. If the objective is growth, as opposed to static efficiency, the theory of growth suggests investment criteria that are quite different from those dictated by comparative advantage. If growth depends on increases in investment, then it may be unwise to channel resources into labor intensive industries even though it is dictated by comparative advantage. This is because the more labor intensive a technique is the lesser the expected savings from it.

Planning and Economic Development

Changing Role of Planning

Socialist Planning

1. Its drawbacks became evident when Soviet growth fell from 10% to 2% in 80s and it faced shortage of consumer goods and social indicators began to worsen. Similar was the experience in E Europe. China was saved only as it pursued reforms.
2. In socialist planning, the prices are distorted, resources are allocated inefficiently and firms have little incentive to become efficient and improve quality.

Arguments in favor of planning

1. Externalities: Positive externalities in terms of infrastructure development (indivisibilities concept included) and negative externalities in terms of environment conservation. Coordination failure hypothesis.
2. Social goods and inclusion: Provide welfare to people excluded by markets. Financial inclusion as well.
3. Market imperfections: Unhealthy practices, weak unions, poor peasants. Asymmetric information, adverse selection (fear of making bad loans makes them cautious and curtail lending and this reduced lending with the pressure to maintain profits induces them to riskier projects) and moral hazard can also lead to market inefficiency.
4. Mobilization of resources: Private sector may not be big enough or financial markets may not be big enough for it to mobilize resources.

Changes in Planning due to Liberalization

1. Planning would only be partial.
2. Change in emphasis of direct government expenditure from economic sectors to social sectors.
3. Planning to be based on consent and participation from multiple stakeholders. Instead of firm allocations, it would amount to fixing broad targets and setting right policy environment.

Creative Function of Markets

1. Markets also have a role to provide an environment for change which expands the PPF. This is called the creative function of markets.

PPP

Q. What are the desired structural changes required for achieving the objective of economic development? (2007, I 20)

Q. "With the change in economic policies, relative role of market and state also changes."
Do you agree with the statement? Illustrate your answer with the help of suitable examples. (2007, I, 60)