

Prospects and Policy Challenges in the Twelfth Plan

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This paper attempts to review the recent performance of the economy and lists the priorities and challenges for the Twelfth Plan. The Indian economy will enter the Twelfth Plan period in an environment of great promise, but the next five years will also be a period of major challenges. The economy has done well on the growth front during the Eleventh Plan, but, going by the information that is at least currently available, not so well on inclusion.

Much of what needs to be done to accelerate GDP growth during the Twelfth Plan will be done by the private sector, but the central and state governments have a crucial role to play in providing a policy environment that is seen as investor-friendly and is supportive of inclusive growth. Four critical challenges facing the economy in the Twelfth Plan, which are perhaps more serious than they were at the start of the Eleventh Plan, are those of (a) managing the energy situation, (b) managing the water economy, (c) addressing the problems posed by the urban transformation that is likely to occur, and (d) ensuring protection of the environment in a manner that can facilitate rapid growth. In addition, the efficiency in implementation of projects on the ground needs to be greatly improved.

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The year 2011-12 is the last year of the Eleventh Plan and this is therefore an appropriate time to review what has been achieved with a view to identify weaknesses in the strategy that need to be corrected, and also identify new challenges that may require new initiatives. This paper is presented in the hope of spurring a broader discussion on these issues.

Section 1 provides an overview of performance against the stated objectives of the Eleventh Plan. Section 2 provides a macro-level assessment of the prospects of improving growth performance in the Twelfth Plan. Section 3 identifies some key policy challenges that need to be addressed.

1 Review of Recent Performance

The Eleventh Plan aimed at delivering faster and more inclusive growth and it is logical to assess performance against this dual objective. Growth and inclusiveness were presented as coequal objectives in recognition of the fact that GDP growth can never be an end in itself. However, faster growth, especially of a particular type, accompanied by economic and social support programmes, which are themselves made more feasible by high growth and buoyant revenues, can bring about an improvement in incomes and living standards for the bulk of the population, which is the end objective.

1.1 India's Growth Performance

There is no doubt that the economy has done very well on the growth front, and this is best appreciated when viewed in a long-term perspective. For two decades in the 1960s and 1970s, India's GDP growth rate averaged only 3.5% per year at a time when other developing countries were growing much faster. The 1980s saw the beginning of a reorientation of policies to achieve higher growth and indeed growth accelerated to 5.6% in that decade. A much broader effort at "systemic reform" was initiated in 1991, based on a wider play of market forces, gradual liberalisation of the financial sector, and opening of the economy to world trade and capital flows. The growth rate of the economy accelerated significantly in the first half of the 1990s, but then slowed down in the second half, averaging 5.7% over the decade as a whole, which was not very different from that in the 1980s.¹

India's performance improved significantly in the first decade of the 2000s, spurred by favourable global conditions and the cumulative effect of the systemic reforms initiated in 1991. The Tenth Plan (2002-03 to 2006-07) had targeted a growth rate of 8% and achieved an average growth rate of 7.8%. The Eleventh Plan (2007-08 to 2011-12) aimed at 9% growth and as shown in Table 1 (p 89), the economy achieved 9.3% growth in the first year, but this momentum was interrupted by the global financial crisis of

2008 when GDP growth dropped to 6.8% for the year 2008-09. However, thanks to contra-cyclical stimulus measures, the economy recovered quickly to record 8% and 8.6% growth, respectively, in the next two years. Growth in 2011-12 was initially projected at 9% in the central government budget but is likely to be lower at around 8.5%. Even so, the average for the Eleventh Plan would be 8.2%, a remarkable performance considering that this period saw the greatest economic crisis the world has faced since the Great Depression.

Table 1: Macroeconomic Balance

	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
1 Rate of growth of GDP	9.5	9.6	9.3	6.8	8.0	8.6
2 Rate of inflation % (average over previous year)						
• WPI	4.4	6.5	4.8	8.0	3.6	8.2
• GDP deflator	4.2	6.4	5.8	6.7	7.5	9.6
• CPI (IW)	4.4	6.7	6.2	9.1	12.4	10.0
3 Fiscal deficit (% GDP)						
• Centre	3.97	3.32	2.55	6.04	6.39	5.1
• States	2.33	1.82	1.49	2.40	3.00	2.62
• Combined	6.30	5.14	4.04	8.44	9.39	7.72
4 Current account deficit (% GDP)	-1.2	-1.0	-1.3	-2.3	-2.8	2.5*
5 Foreign direct investment inflows (\$ billion)	8.96	22.83	34.84	35.18	37.18	24.0
6 Foreign portfolio investment inflows (\$ billion)	12.49	7.00	27.27	-13.86	32.38	35.0*

* Advance Estimates.

Improved economic performance has dramatically altered global perceptions of India's potential. An early recognition of this was a Goldman Sachs report of November 2002, which included India, with Brazil, Russia and China in a new BRIC group of emerging market countries which was predicted to overtake the G-8 in terms of total GDP by 2035.² Continued strong performance in the decade of the 2000s and resilience in the face of a global slowdown, has reinforced this positive assessment. The general perception today is that India may now be on the path of sustained high growth based on high rates of domestic savings, high quality of entrepreneurial and managerial skills, and the cumulative effect of economic reforms on productivity. Similar transitions have been achieved by the other Asian countries such as Japan, Korea, Taiwan, and most recently China, and it is felt that India may also now be in the same position. How far this forecast is reasonable, and the many constraints that have to be overcome to realise this potential, are discussed in Sections 2 and 3.

1.2 Performance on Inclusiveness

It is more difficult to assess performance on inclusiveness than on growth for three reasons. First, inclusiveness is a multidimensional concept and progress therefore needs to be assessed in many different dimensions. Second, the data relating to various aspects of inclusiveness become available only after a considerable lag, and information for the Eleventh Plan period is often not available. Third, most policies aimed at inclusiveness have an impact only over a relatively long term, and this means that even when policies are moving in the right direction, the results may only be evident much later. For example, steps taken to improve education for the poor will improve their earning ability in future, but this impact will only be reflected in actual income earning much later.

1.2.1 Multidimensionality of Inclusion

The multidimensional nature of inclusiveness is best illustrated by listing some of the many dimensions that are relevant. The extent of reduction in the percentage of the population below the poverty line is clearly a very important indicator of progress. However, many families that are above the poverty line in terms of per capita consumption may lack access to basic services such as education, health, clean drinking water and sanitation. Inclusiveness must obviously include progress in delivery of these essential services. Inclusiveness must also extend to addressing concerns about inequality. It is sometimes argued that inequality should not matter as long as the poor are getting better off and it is probably true that a rapid rate of improvement in incomes for the poor may make them willing to accept some increase in inequality. However, large increases in inequality, accompanying only modest improvements in the levels of living of the poor, are unlikely to be acceptable. Inequality in this context relates not only to the distribution of income or consumption across individuals, but also inequality across states, and in some cases, even across regions within states.

Inclusiveness in the Indian context also requires a special focus on particular social groups such as the scheduled castes (SC) and scheduled tribes (ST), and also the minorities. Since these groups are concentrated in the lower ranges of the income distribution, it may be thought that an effective strategy for reducing poverty or inequality addresses the concerns of these groups. However, if inclusiveness is defined as bringing these groups at par with the rest of the population, it has to address the issue of achieving a fair representation for these groups along the entire income distribution. This is conceptually very different from reduction in overall poverty or inequality, in the sense that it can be achieved leaving the incidence of poverty and the level of inequality unchanged.

The Eleventh Plan explicitly recognised the multidimensional nature of inclusiveness by enumerating 27 monitorable targets of

Table 2: Percentage of Population Below Poverty Line

States	Lakdawala Methodology		Tendulkar Methodology		Tentative Estimates ¹ 2009-10
	1993-94	2004-05	1993-94	2004-05	
Andhra Pradesh	22.2	15.8	44.6	29.9	20.0
Assam	40.9	19.7	51.8	34.4	39.2
Bihar	55.0	41.4	60.5	54.4	54.8
Gujarat	24.2	16.8	37.8	31.8	26.6
Haryana	25.1	14.0	35.9	24.1	23.8
Himachal Pradesh	28.4	10.0	34.6	22.9	11.7
Jammu and Kashmir	25.2	5.4	26.3	13.2	12.8
Karnataka	33.2	25.0	49.5	33.4	26.5
Kerala	25.4	15.0	31.3	19.7	11.3
Madhya Pradesh	42.5	38.3	44.6	48.6	40.5
Maharashtra	36.9	30.7	47.9	38.1	26.4
Orissa	48.6	46.4	59.1	57.2	46.4
Punjab	11.8	8.4	22.4	20.9	19.3
Rajasthan	27.4	22.1	38.3	34.4	29.4
Tamil Nadu	35.0	22.5	44.6	28.9	18.3
Uttar Pradesh	40.9	32.8	48.4	40.9	40.5
West Bengal	35.7	24.7	39.4	34.3	32.5
All India	36.0	27.5	45.3	37.2	32.2

¹ Estimates for 2009-10 have been made by C Ravi of the Centre for Economic and Social Studies, Hyderabad based on group data from the 2009-10 NSSO Survey and using the Tendulkar Committee poverty line for 2004-05 adjusting for using the CPIAL for rural areas and the CPIIW for urban areas. These estimates are an approximation of what can be expected when the Tendulkar methodology is applied to the unit level data as will be done by the Planning Commission when the unit level data become available.

which GDP growth was only one. The others focused on different aspects of inclusion such as growth in agriculture, reduction in poverty, growth of employment opportunities, etc. One consequence of multidimensionality is that the extent of progress in different dimensions will vary. For example, it is perfectly possible for poverty to decline while inequality increases. Similarly, inequality among households in the country as a whole may decrease, or remain unchanged, while inequality across states increases. Any overall assessment of progress on inclusiveness will have to be based on a composite view of all these developments.

Subject to these caveats, a summary of what has been achieved in the Eleventh Plan is attempted below.

1.2.2 Reduction in Poverty

Table 2 (p 89) summarises the change in poverty between 1993-94 and 2004-05, which is the latest year for which official data are available. The table reports the earlier estimates, based on the Lakdawala Committee method, and also the new poverty estimates based on the recommendations of the Tendulkar Committee. The poverty estimates of the Tendulkar Committee are higher, but both estimates show a decline in the percentage of the population in poverty in the pre-Eleventh Plan period. However the pace of reduction is very modest, about 0.85 percentage points per year using the Lakdawala estimates and slightly lower at 0.81 percentage points per year using the Tendulkar estimates.³

The Eleventh Plan had set a more ambitious target of reducing poverty by 2 percentage points per year. Abhijit Sen (2010) has estimated that poverty declined sharply from 37% in 2004-05 to 29% in 2007-08, which is much more than 2 percentage points per year. However, 2007-08 was a "thin sample" round and is therefore not used for computing official estimates of poverty. The next large sample round is the 66th round for 2009-10 and the Planning Commission will compute poverty from this round once the unit level data become available.

Some indication of what the 2009-10 data will reveal can be had from the estimates made by C Ravi of the Centre for Economic and Social Studies, Hyderabad working with group data for 2009-10. His results, also reported in Table 2, show that poverty in 2009-10 was 32%, an increase over the 2007-08 level, possibly reflecting the recession and the severe drought in 2009. At 32%, poverty between 2004-05 and 2009-10 declined at the rate of 1 percentage point per year, better than in the previous period, but well below the Eleventh Plan target. Fortunately, recognising that the 2009 poverty estimate may be distorted because of the drought, the National Sample Survey Organisation (NSSO) has decided to conduct a second large sample survey in 2011-12. It is only when estimates from this survey become available will we be able to get reliable estimates of the rate of poverty reduction actually achieved in the Eleventh Plan period.

It is interesting to note that the performance in reducing poverty between 2004-05 and 2009-10 varies considerably across

states. The four southern states (Andhra Pradesh, Tamil Nadu, Kerala and to lesser extent Karnataka) all report impressive reduction in poverty, as do Maharashtra, Orissa, Madhya Pradesh and Himachal Pradesh. There is no improvement in Uttar Pradesh and Bihar, very little improvement in West Bengal and an actual deterioration in Assam. Punjab and Haryana had relatively lower poverty rates to begin with, but do not seem to have improved their position. How far these differences reflect differences in the pace and nature of growth in each state, and how far they reflect differences in the implementation of anti-poverty schemes, is a subject that needs further investigation based on the final official estimates of poverty obtained from unit level data.

1.2.3 Accelerating Agricultural Growth

Since half the population derives the bulk of their income from agriculture, and this sector had decelerated to about 2% growth per year in the decade preceding the Eleventh Plan, the Plan had

Table 3: Progress Over Time in Select Health Indicators

	Maternal Mortality Rate		Infant Mortality Rate		Full Vaccination		Safe Delivery		Child Malnutrition-Underweight	
	1999-2001*	2004-06*	2001*	2009*	2005@	2009@	2005@	2009@	1992-93§	2005-06§
All-India	327	254	66	50	54.5	61.0	58.9	76.2	47.9	40.4
Andhra Pradesh	220	154	66	49	72.3	68.0	77.8	95.6	42.9	29.8
Assam	398	480	74	61	25.8	59.1	40.3	65.5	44.1	35.8
Bihar	400	312	62	52	19.0	49.0	25.5	53.2	58.7	55.0
Gujarat	202	160	60	48	63.1	56.6	74.8	85.2	42.7	41.3
Haryana	176	186	66	51	57.2	71.1	53.1	69.3	31.0	38.2
Karnataka	266	213	58	41	86.9	78.0	74.6	88.4	46.4	33.2
Kerala	149	95	11	12	82.1	81.5	99.4	99.9	22.1	21.2
Madhya Pradesh	407	335	86	67	38.9	42.9	42.7	82.9	57.4	57.9
Maharashtra	169	130	45	31	58.9	78.6	75.5	85.5	47.3	32.5
Orissa	424	303	91	65	53.2	59.5	52.7	79.1	50.0	39.4
Punjab	177	192	52	38	83.5	83.6	71.6	66.7	39.9	23.6
Rajasthan	501	388	80	59	49.9	53.8	45.4	75.8	41.8	36.9
Tamil Nadu	167	111	49	28	79.6	77.3	92.7	98.6	40.7	25.9
Uttar Pradesh	539	440	83	63	33.8	40.9	34.4	64.2	52.7	41.5
West Bengal	218	141	51	33	54.4	64.9	54.6	72.6	53.2	37.6

@ Coverage Evaluation Survey, UNICEF. § National Family Health Survey (NFHS)
Source: * Various SRS Bulletins, Office of the Registrar General, Gol (MHA).

Table 4: Progress over Time in Select Education Indicators

	Net Enrolment Ratio in Classes I-V (Primary Education)		Dropout Rates Classes I-VIII (Elementary)		Literacy Rate Population Age 7 Years and Above	
	1997-98*	2007-08*	1997-98*	2007-08*	2001§	2011§
All-India	71.1	95.9	56.1	43.0	64.8	74.0
Andhra Pradesh	68.6	78.8	73.4	48.7	60.5	67.7
Assam	98.4	88.8	69.1	73.5	63.3	73.2
Bihar	75.9	99.5	77.1	70.7	47.0	63.8
Gujarat	86.4	86.3	60.3	48.2	69.1	79.3
Haryana	73.4	65.0	30.8	6.5	67.9	76.6
Karnataka	88.6	98.6	56.4	33.9	66.6	75.6
Kerala	71.5	68.0	-0.8	0.0	90.9	93.9
Madhya Pradesh	88.1	94.2	48.3	46.1	63.7	70.6
Maharashtra	84.4	84.9	39.9	30.5	76.9	82.9
Orissa	69.7	92.7	66.4	61.3	63.1	73.5
Punjab	70.6	53.0	28.4	26.0	69.7	76.7
Rajasthan	71.6	85.2	64.0	62.3	60.4	67.1
Tamil Nadu	84.6	97.8	30.0	9.1	73.5	80.3
Uttar Pradesh	46.8	90.4	52.6	28.6	56.3	69.7
West Bengal	55.6	84.1	72.2	63.9	68.6	77.1

§ Office of the Registrar General, Gol (Ministry of Home Affairs).
Source: * Ministry of Human Resource Development, Gol.

the economy, and its perceived high growth potential, it will remain an attractive investment destination as long as policy towards investment in general and FDI in particular is seen to be supportive and the macroeconomic environment is judged to be sound.

This positive assessment needs to be qualified by noting that the external environment is vulnerable to growing concern about the fiscal situation in some industrialised countries. Worries about fiscal unsustainability, especially in the US, could lead to higher long-term interest rates globally and also greater volatility in capital flows to emerging markets. However, India's relative attractiveness as an investment destination could offset this effect if the policy environment is viewed as macroeconomically sound and investor-friendly. Some of the relevant issues are examined in greater detail in Section 3.

2.2 Supply-side Constraints on Growth

Supply-side constraints on India's growth potential at the macro level are best examined using the traditional growth accounting framework which explains growth of GDP in terms of growth of capital and labour inputs and the growth of total factor productivity. There are good reasons to be optimistic on all three counts.

2.2.1 Growth of Capital

The growth of capital inputs depends on the rate of investment, which in turn depends on the investment climate and the scope for financing the investment from domestic savings and foreign capital inflows. Although a great deal of attention is rightly focused on the financing constraint, we need to keep in mind that in a dominantly private sector led development process, a favourable investment climate is an essential precondition for potential investors to undertake new investment or expand capacity. One can envisage a situation in which resources to finance investment are available, but investment does not take place simply because entrepreneurs do not find investment opportunities attractive, i.e., "animal spirits" are missing.

Private investment in India was very buoyant prior to the crisis. As shown in Table 8, private corporate fixed capital formation increased from 9.1% of GDP in 2004-05 to a peak of 14.3% in 2007-08 just before the crisis. Thereafter, it declined to 10.4% in 2008-09, and was only slightly higher at 10.8% in 2009-10. Data for 2010-11 are not yet available, but this percentage is likely to have increased further, though not back to the previous peak.

Table 8: Savings and Investment

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
1 Gross domestic saving (% GDP) of which:						
Household sector	32.4	33.5	34.6	36.9	32.2	33.7
Private corporate sector	6.6	7.5	7.9	9.4	7.9	8.1
Government administration	-2.3	-2.1	-1.0	0.5	-3.3	-1.2
Public enterprises	4.6	4.5	4.6	4.5	4.0	3.4
2 Gross domestic capital formation (% GDP)	32.5	34.3	35.9	38	35.4	35.8
3 Gross fixed capital formation (% GDP) of which:						
Household sector	12.7	11.2	10.9	10.6	13.1	11.5
Private corporate sector	9.1	11.8	12.5	14.3	10.4	10.8
Public sector	6.9	7.4	7.9	8.1	8.6	8.4

Source: Central Statistical Organisation, Ministry of Statistics + Programme Implementation.

The decline in private corporate fixed investment after 2008-09 has been partly offset by higher investment by the household sector and by the public sector. As a result, gross fixed capital formation (GFCF) in the household, private corporate and public sector combined increased from 28.7% of GDP in 2004-05 to a peak of 33% in 2007-08 after which it fell to 32% in 2008-09 and declined further to 30.8% in 2009-10.

It is difficult to predict what will happen to private investment in the short run. However, allowing for a continuing recovery in fixed investment from the post-crisis trough, we could end the Eleventh Plan with GFCF somewhere around 33% of GDP. Allowing for some further increase in the Twelfth Plan period, including especially a return of private corporate investment to the peak level observed in 2007-08 and some improvement beyond that level, the average rate of GFCF in the Twelfth Five-Year Plan could be around 36%, which should suffice to generate sustained GDP growth of 9% per year. The gross domestic capital formation rate consistent with this projection is around 40% of GDP.

The ability to finance this level of capital formation depends largely on what happens to domestic savings and foreign capital inflows. Prospects on both fronts are positive. As shown in Table 8, the average gross domestic savings rate increased to a peak of 36.9% in 2007-08, declining thereafter to 32.2% in the crisis year 2008-09. The deterioration of 4.7 percentage points of GDP is very largely accounted for by the deterioration of as much as 3.8 percentage points in government savings, reflecting the fact that the contra-cyclical expansion in India was largely on account of an increase in subsidies because petroleum and fertiliser prices were not adjusted.⁹

The savings rate recovered to 33.7% in 2009-10 reflecting an improvement in all categories, including government administration, though the public sector enterprises savings rate continued to be low. With further improvement expected in 2010-11, and hopefully also in 2011-12, as fiscal consolidation takes hold we could end the Eleventh Plan with a gross domestic savings rate of around 35%. Allowing for some further improvement during the Twelfth Plan, particularly in government savings, we can reasonably plan for an average saving rate in the Twelfth Plan period of around 37%. This together with a current account deficit of around 3% of GDP should be able to finance a gross capital formation rate of around 40%.

The macroeconomic parameters presented above are tentative at this stage, and their internal consistency will be more rigorously tested through various models used by the Planning Commission in the formulation of the Twelfth Five-Year Plan. However, they do suggest that with some effort, there is scope for increasing both domestic savings and investment to levels broadly consistent with 9% growth, or even a little more.

2.2.2 Labour Inputs

Labour supply prospects are also favourable for high growth. It is well known that the working age population in India is expected to increase over the next 20 years, whereas in the industrialised countries, and also in China, it will be going down. While this is sometimes presented as a potential demographic dividend, it is worth cautioning that a growing workforce is an advantage only if

(a) sufficient investment is taking place to generate the GDP growth needed to absorb labour productively, and (b) if the education and skill level imparted to the new entrants is consistent with employability. In the absence of these two conditions, a growing number of young entrants to the labour force could as easily be a recipe for unemployment and consequent unrest. The prospects for achieving a high level of investment are good, for the reasons outlined above. The task of ensuring that the new entrants to the labour force have employable skills is more challenging.

Table 9 presents data on the mean years of schooling for the population over 15 years for India and for selected comparator countries. Mean years of schooling in India increased from 3.45 in 1990 to 4.20 in 2000 and 5.12 in 2010. This compares with 5.62 in China in 1990, 7.11 in 2000 and 8.17 in 2010. India clearly lags significantly behind China in terms of the average education level of the labour force. However, India's position today is roughly comparable to China's in the 1985, and starting from that position, China achieved an average growth of GDP over 10% per annum for 30 years. There is no reason why India cannot do the same, especially because efforts to expand enrolment and reduce drop-out rates over the past several years will ensure that the quality of the new addition to the labour force will be much higher than the present average.

The Eleventh Plan period saw several important initiatives including near universalisation of primary education, the passage of the Right to Education Act, the initiation of a massive programme for expansion in secondary education, combined with several steps in higher education.¹⁰ The Eleventh Plan placed considerable emphasis on quantitative expansion to improve access and this will have to continue in the Twelfth Plan. In addition, greater emphasis will have to be placed on quality. Initiatives in these areas have to be taken by the centre and states and also by the private sector.

Skill development has been neglected in the past and needs much faster expansion. Over 90% of our labour force at present has received no formal training prior to employment and skills are typically acquired only on the job. This is simply not consistent with 9% growth in GDP per year in an increasingly modernising economy. The Eleventh Plan had set a target of having 500 million individuals in the labour force with some formal training by 2020. Several initiatives have been launched in pursuit of this objective, including the establishment of a National Skill Development Council under the chairmanship of the prime minister, with parallel state level councils chaired by the chief ministers. Government financial support is now available for private skill imparting units offering courses for a wide range of skills. A Skill Development Corporation has been established

with government funding to support private sector-led skill development initiative. Efforts are being made to involve private sector partners in the management of Industrial Training Institutes (ITIs) in an effort to make the curriculum more relevant. Involving the private sector in skill development is extremely important as it increases the likelihood that the skills imparted are marketable.

2.2.3 Factor Productivity Growth

It is well recognised that a high rate of growth of GDP requires not only rapid growth of primary inputs such as capital and labour, but also high rates of total factor productivity growth (TFPG). TFPG itself is a combination of pure technical progress and the ability to utilise factors more efficiently, the latter often being made possible by economic and institutional reforms which enhance productivity. Much of the rationale of the reform agenda pursued since 1991 was that it will enable realisation of higher TFPG.

Studies of TFPG focusing on the manufacturing sector alone have yielded mixed results. Early studies focusing on the 1990s found a slowdown in TFPG compared to the previous decade, e.g., Das (2004), Balakrishnan et al (2000), or near constancy in TFPG, as reported by Goldar (2004). In a more recent paper Hashim and Virmani (2011) have asserted a J curve phenomenon, in which TFPG first declines but then rises, with a considerable further potential for high TFPG growth, conditional on additional reforms being implemented. Studies of TFPG at the aggregative level of the economy as a whole have been generally more positive. Virmani (2006) estimates that whereas TFPG contributed only 0.1 percentage points to the annual growth rate in the period 1965-66 to 1979-80, this increased to 2.9% in the period 1980-81 to 1991-92 and finally to 3.6% in the period 1992-93 to 2003-04. Bhalla (2011) has estimated TFP growth for the period 1985-2003 to be at 3%, increasing to 3.7% for the period 2003-10.

These results are subject to all the usual caveats associated with estimations of TFP growth – and there are many – reflecting concerns about data and also model specification. However, the studies, especially at the aggregate economy level, do suggest that the economic reforms initiated in 1991 have increased the growth potential of the economy by increasing the level of TFPG. The critical issue, looking ahead, is whether we can count on continuing high rate of TFPG. In this context it is worth noting that high TFPG rates in the early stages of economic reform reflect not only pure productivity growth but also the fact that the economy is moving from a position well inside the production possibility frontier to a position closer to the frontier. The contribution of the latter is obviously large initially but moderation in TFPG should be expected over time as the economy moves closer to the frontier. However, India is still at an early stage of the transition, with considerable scope for exploiting potential total factor productivity gains, provided economic reforms are systematically pursued and deepened. The scope for such deepening of reforms is discussed in Section 3. It does suggest that there is a large agenda of reforms which if systematically implemented could produce significant gains.

3 Some Critical Policy Challenges

Favourable macro factors of the type discussed in Section 2 are important, but they can at best create an enabling environment

Table 9: Mean Years of Schooling
(Population aged 15 and over)

	Mean Years of Schooling
India	
1990	3.45
2000	4.20
2010	5.12
China	
1990	5.62
2000	7.11
2010	8.17
Indonesia	
1990	4.25
2000	5.23
2010	6.24
Thailand	
1990	5.41
2000	6.11
2010	7.50

Source: Barro and Lee (2010), "A New Data Set of Education and Attainment in the World, 1950-2010", NBER Working Paper No 15902.

that needs to be supported by specific policy initiatives in a number of areas. A comprehensive analysis of these issues is beyond the scope of this paper although it will be part of the process for formulating the Twelfth Plan. What is attempted in this section is the identification of some of the critical sectoral and policy issues that will need to be addressed if growth is to be pushed to 9% or a little more in the Twelfth Plan, and also made more inclusive and sustainable. Some of the items in the agenda involve completion of what is in the pipeline, but there are several areas where new initiatives are needed.

3.1 Financing the Plan with Macroeconomic Balance

As pointed out earlier, the combined fiscal deficit of the centre and the states had expanded because of the stimulus, and has to be brought back to sustainable levels. This process has begun, and the centre's fiscal deficit is projected to fall from 5.1% of GDP in 2010-11 to 4.6% in 2011-12 followed by further reduction of 0.5 percentage point, per year in the next three years, to reach 3% by 2014-15. Adding a fiscal deficit of around 2.5% for the states, the combined deficit of the centre and the states is therefore projected at about 5.5% by 2014-15.

The proposed reduction in the combined deficit from 7.7% in 2010-11 to 5.5% in 2014-15 involves an improvement of 2.2 percentage points of GDP over four years. This is not too onerous. In fact, the proposed deficit for 2014-15 would still be higher than the 4.8% achieved in 2007-08, eight years earlier. However, the real challenge is that the reduction in the fiscal deficit has to be achieved while also achieving an increase of at least around 1.5 percentage points of GDP in Plan expenditure of the centre and states combined. This order of increase is the minimum necessary if we are to provide adequately for the essential requirements of education, health and public financing of critical infrastructure, including especially in rural and other backward areas.

Plan expenditure on education and health taken together may have to be increased by about 2 percentage points of GDP and expenditure on critical infrastructure, by at least 0.5% of GDP taking the total increase on these accounts to 2.5 percentage points. If total Plan expenditure is increased by only 1.5 percentage points, it implies a considerable moderation in the demands of other Plan schemes.

Reducing the fiscal deficit by 2.2 percentage points, while also increasing Plan expenditure as a ratio of GDP to around 1.5 percentage points, requires an improvement of around 3.7 percentage points of GDP which has to be achieved through some combination of increased revenues and reduced non-Plan expenditure, as a percentage of GDP. A reasonable expectation would be to aim for an increase in revenues as a percentage of GDP by a little over 2 percentage points and a reduction in non-Plan expenditure as a percentage of GDP by about 1.5 percentage points.

As far as revenues are concerned, the aim should be to achieve higher tax ratios without resorting to distortionary taxation. We can count on some increase in the tax ratio on account of buoyancy, but a substantial part of the targeted improvement must come from tax reforms. The most important initiative in this context is the Goods and Services Tax (GST), for which a Constitution

Amendment Bill has been introduced. The GST, once implemented, will convert the present regime in which the central and state governments levy multiple indirect taxes separately on different tax bases, into a more rational system with separate central and state taxes, but applied on a common base, preferably with a single common rate (subject to a few exceptions). Since taxes on the input stage in each of the central and state streams will be netted out at the next stage, the GST would be a true value added tax, contributing hugely to both economic efficiency and revenue collection. Because implementation of the GST involves a constitutional amendment, a successful outcome may take time, but once achieved, it will be a major achievement. Progress of this legislation in Parliament will be closely watched by analysts and potential investors and credible signs of progress will be widely welcomed.

Some reduction in non-Plan expenditure as a ratio of GDP will happen automatically if there is high growth, because government employment is not expected to increase significantly, and no new pay commission impact is expected in the Twelfth Plan period. However, progress in this area will also depend on whether subsidies, which have grown in scale in both the central government and the states, can be curtailed. The major subsidies in the centre are on food, fertilisers and on petroleum products, which together account for around 2% of GDP. State budgets also have subsidy elements, but the major "subsidy" is the very large losses of the state power utilities, which has now touched almost 1% of GDP.

Food subsidies, which amount to about 0.7% of GDP, will be difficult to contain in view of the commitments on National Food Security. The focus of attention for subsidy control by the centre should therefore be on the subsidy on fuel and fertilisers. In the case of the states, the principal focus must be on the large losses in the power sector. The latter reflects a combination of very substantial underpricing of electricity to farmers (with free electricity in some cases) combined with inefficiency and competition in billing and collection.

Reducing subsidies will not be easy and a conscious effort is needed to build public and political support for a significant reduction in inefficient and non-targeted subsidies as a percentage of GDP, in order to finance the much needed additional Plan expenditure in health, education and agriculture-related infrastructure.

3.2 Policies for Better Agricultural Performance

The 4% target for growth in agriculture, which will be missed in the Eleventh Plan, must be achieved in the Twelfth Plan as it is critical for inclusiveness. Fortunately, this is technically feasible as there is ample evidence that productivity per hectare can be increased by 80% to 100% for many crops in large areas by applying modern agronomic practices based on existing technology. However, achieving these increases in productivity requires action on several fronts, most of which lie in the domain of state governments.

Water is a key input, and better systems of water management, including especially the ability to control timing and quantity of water application, are critical. We return to this issue in a later part of this section. This must be combined with availability of better quality seeds, and adoption by farmers of

optimal levels of seed replacement. Much greater attention also needs to be paid to soil health, focusing particularly on micronutrients and carbon content. Since micronutrient deficiencies are area-specific, a system of soil health cards issued to farmers, with periodic soil testing, must be put in place. Carbon content can be increased by shifting from the traditional practice of burning crop residue to leaving it in the field. Shifting to more efficient use of water requires new practices such as land leveling, use of drip irrigation, zero till cultivation, raised seedbed planting, and in the case of rice, adoption of the System of Rice Intensification (SRI), etc.

State governments must act on several fronts to present a package of interventions tailored to the requirements of particular agro-climatic zones. Delivering only a few elements of the package will not produce optimal results. The farmer has to be persuaded of the importance of the complete package, and both physical and knowledge inputs needed to implement the package, have to be made available. The extension system, has more or less collapsed in most states, yet a strong system of extension is crucial for knowledge delivery. At present, the principal source of information for the farmer is the retailer of inputs, who is not free of conflicts of interest.

Since most of the growth in agriculture in future will come not from foodgrains, but from sectors such as horticulture, dairying and fisheries, where the produce is perishable, much greater attention needs to be paid to the logistics of transporting produce from the farm to the consumer, with minimum spoilage. This requires active involvement of the private sector. To facilitate such involvement, state governments must amend the Agricultural Produce Marketing Committee (APMC) Acts which at present prevent private sector buyers from dealing directly with producers. Some states have amended their APMC Acts, but the rules are either not notified, or are not designed to encourage entry of private players. For example, giving licences to operate outside the mandi only for a year at a time, as is the case in some states, discourages any serious long-term private sector investment. There is an overwhelming case for exempting horticultural produce entirely from the APMC Act. Much of the reluctance to make these changes reflect the operation of vested interests who control the mandis. Establishing better road connectivity in rural areas helps market access and the Pradhan Mantri Gram Sadak Yojana is an important intervention in this regard.

Another area for policy intervention by state governments is the reform of laws relating to leasing of land. As holdings are subdivided and become uneconomic, very small and marginal farmers may be better off leasing out their land to more viable farmers, while seeking paid employment themselves. They would be more willing to do this if they felt that they could lease out their land and get it back when they want. Yet, leasing is not legal in some states. Where it is allowed, the law is biased towards the tenant, whereas the need of the hour is to protect the interest of the small farmers leasing out land.

Unfortunately, despite the importance of agriculture for rural prosperity very few state governments have taken up the challenge of bringing about the multifaceted transformation that is needed. There is too much focus on delivering a variety of subsidies in

power, seeds, and credit, and not enough on bringing about a change in farming practices and adoption of new technology that would actually raise land productivity and enable farmers to become less dependent on subsidies in the long run.

3.3 Employment Generation

A key challenge in the Twelfth Plan is how to ensure creation of a sufficient number of productive jobs in the non-agricultural sector to absorb the expected increase in the labour force and also absorb surplus labour that must be shifted out of agriculture. The need to shift labour out of agriculture follows from the fact that productivity in agriculture is relatively low and if agriculture is not expected to grow at more than 4%, the only way labour productivity in agriculture can rise at a rate higher than 4% is for employment in agriculture to shrink. This is actually necessary to reduce the present underemployment in agriculture and a steady improvement in real wages in this sector. Needless to say, the proposed shift out of agriculture should occur not as distress migration, but as a natural movement to higher paid employment in non-agricultural activity, some of which could be in rural areas itself. Agricultural development will itself give rise to new demands for non-agricultural services and generate employment in agriculture-related sectors such as modernised marketing and agro-processing activity.

A large part of the job opportunities we need must come from a more rapid expansion in manufacturing. The industrial sector was targeted to grow at an average rate 10% to 11% per year in the Eleventh Plan, but the actual achievement is unlikely to exceed 8%. Most economic simulations suggest that if the economy is to grow at 9% in the Twelfth Plan, and agriculture, which now accounts for only 15% of GDP, is constrained to grow at 4%, then services should grow at around 10% and industry at 11%. Industry must not only grow faster than it has thus far, it must also be more able to absorb labour with relatively simple skills of the type which migrants from rural areas can acquire.

Micro, small and medium enterprises, are generally more labour absorbing, and are also potential seedbeds for innovation and entrepreneurship. The policy environment must encourage the growth of these industries and this does not mean sops and subsidies. Rather, the main effort should be to provide these smaller industrial units with first class infrastructure which includes both reliable power supply at reasonable cost, good transport connectivity, a pool of skilled labour to draw upon and a financial sector capable of making resources available to potentially successful entrepreneurs.

Expansion of industrial activity must also be regionally balanced since demographic projections suggest that the growth of labour supply in future will be much greater in the northern states that are industrially backward at present. Migration will take care of some of the regional mismatch but there is a strong case for doing more to ensure that employment opportunities expand in states that are expected to generate larger growth of labour. This is best achieved by state governments paying much greater attention to the infrastructure needs and skilled labour requirements of industry that could locate in those states. Adequate availability of power and good connectivity are crucial.

State governments must also be more active in reducing the transactions cost of doing business and this means making regulatory bodies, tax authorities, and utilities more business friendly.

Finally, some consideration has to be given to the long-standing issue of the need to rationalise our labour laws to give employers more flexibility to shed labour when faced with a downturn. This is not to advocate policies of hire and fire, but only to say that more flexibility needs to be built into the labour laws than exist at present. Flexibility to lay off labour when faced with a downturn could be accompanied by steps to enhance other aspects of labour protection, including especially safety and larger compensation for lay offs. This is obviously a politically sensitive issue and the position taken by the government thus far is that we need to build a consensus with representatives of labour. This effort must be pushed to some positive conclusion.

3.4 Infrastructure Development

The Eleventh Plan recognised the importance of investing more in infrastructure sectors such as power, roads, ports, airports, and railways, and sought to raise investment in these sectors from about 5.6% of GDP in the base year of the Eleventh Plan 2006-07 to around 9% by the last year, i e, 2011-12. The actual achievement is likely to be around 8.5%, with some sectors, e g, telecommunications, achieving higher levels of investment than projected, while others achieved significantly less. The task begun in the Eleventh Plan has to continue in the Twelfth Plan, which should aim at increasing the rate of investment in infrastructure to around 10.5% by 2017-18. This implies that investment in infrastructure, which was targeted at \$500 billion in the Eleventh Plan period, would have to increase to about \$1 trillion over the Twelfth Plan period 2012-13 to 2017-18. This poses two major challenges. One is how to finance the investment needed, and the second is how to overcome implementation hurdles, which currently delay project completion.

As far as financing is concerned, it is clear that public sector resources will be scarce and, as noted above, the first priority for these resources must be education and health, which are crucial for inclusiveness and are currently underfunded. Critical infrastructure in rural areas and backward areas is another priority. Both the central and state governments must therefore follow an infrastructure strategy which consists of a combination of public investment and public-private partnership (PPP). Public investment would have to be directed to areas where the private sector is unlikely to come, with the rest of infrastructure being developed as far as possible through PPP. Valuable experience has been gained in this area and many of the teething problems related to procedures for structuring PPP projects have been overcome. We need to build on this experience and launch a renewed effort in which the role of PPP in infrastructure investment may have to increase from around 30% in the Eleventh Plan to as much as 50% in the Twelfth Plan.

The second major challenge in infrastructure development relates to implementation. Infrastructure projects are often delayed due to difficulties in land acquisition, and where land has been acquired, due to other difficulties such as dealing with encroachments and lack of coordination with other utilities. Projects are also held back by difficulties in obtaining forest and

environmental clearances. Protecting forests and the environment is obviously an extremely important objective, but the current processes are often not sufficiently transparent and predictable. However, project developers are not without blame. They have got used to laxity in application of environmental regulations and there is a tendency to ignore environmental regulations or act in anticipation of clearances in the belief that such actions can be regularised later. We need to move to a system with much greater transparency, predictability and also tighter enforcement in future. In the process we may need to find ways of dealing with the problems of ongoing projects in a reasonable manner while establishing better systems for the future. Both the central government and the state governments have to give serious attention to resolving these problems in the years ahead.

3.5 Reforms in the Financial Sector

Rapid growth needs to be supported by an efficient financial system capable of mobilising the savings in the system and using them to support economically efficient units. By financial system in this context we mean the whole range of institutions such as banks, non-bank finance companies, microfinance institutions, efficient and well-regulated capital markets, mutual funds, insurance companies, pension funds and venture capital funds, each of which has an important role to play.

In one sense, India's financial sector can be said to be in a strong position having benefited from a process of carefully calibrated liberalisation, combined with steps to strengthen the regulatory framework. The system certainly proved resilient during the global financial crisis, and this was a very strong positive factor in maintaining growth. However, while the financial system scores high on stability, there is room for improving the efficiency of financial intermediation and increasing innovation, both of which are necessary. This calls for a continuation of the process of calibrated financial reform. Stopping the process of liberalisation because it was excessive liberalisation with weak regulation which produced the financial crisis in industrialised countries would be a serious misreading of the situation.

Several important initiatives related to financial sector reform are already in the pipeline. These include (a) announcement of the road map for new private sector banks and foreign investment in banks, (b) deregulation of the savings rate offered by banks which remains regulated, though it was recently raised from 3.5% to 4%, (c) legislation increasing the limit on FDI in insurance from 26% to 49%, (d) passage of the Pension Fund Regulatory and Development Bill, (e) passage of the legislation allowing shareholders to vote their equity share in banks instead of being limited to 10% as at present, and (f) passage of the Company Laws Amendment which will modernise bankruptcy proceedings. Completion of these steps, some of which depend on parliamentary approval, will represent very substantial forward movement in an important area.

The creation of a vibrant and liquid corporate bond market should have particularly high priority, especially in view of the need to finance large private investments in infrastructure. Several of the regulatory changes recommended by various expert committees to help develop bond markets have been

implemented, but the response thus far remains limited. One reason is the very high fiscal deficit, which effectively crowds out corporate borrowing and the fiscal consolidation programme discussed above will clearly help. Reform of the government securities market in terms of building institutions, introduction of technology, etc, of the kind that was seen in the equity markets, is also necessary for the establishment of a G-sec yield curve for all maturities against which corporate bond yields can be priced. The creation of the Public Debt Management Office outside the RBI, which has been announced and is in the process of being established, will be another important step as it would free the RBI from having to perform the role of debt manager. Improved access to liquidity for primary dealers in the bond market is another important step.

Investment policies of LIC, EPFO, etc, are very conservative at present, leading these institutions to prefer lower yielding government debt to higher yielding corporate debt, except of the very highest investment grade. A possible reason could be the absence of efficient mechanisms for debt recovery in the event of default. Unlike banks, which benefit from SARFAESI, bond holders can only have recourse to liquidation and bankruptcy procedures which are hopelessly time consuming. The passage of the Company Law Amendment Bill mentioned above, which contains provisions to modernise bankruptcy proceedings, is an important step in this context.

Proposals for establishing infrastructure debt funds based on investors abroad investing in long-term debt issued by infrastructure project companies are currently being examined by the finance ministry. The establishment of such funds would help infrastructure companies to refinance shorter term bank debt with longer term debt while freeing banks to finance new projects. A positive decision on this proposal would be an important signal to investors.

The size of Indian banks is another important issue. Even the largest Indian bank, the State Bank of India, is actually quite small by global or even Asian standards. Since banks will continue to be the source of medium-term capital in India for some time, until the capital market becomes a credible source for corporate long-term debt, the capital of the banks has to be increased greatly to allow larger exposures to individual projects and also to sectors. Public sector banks must therefore have a larger capital base. This could be done by allowing them to issue additional capital in the market and reducing government equity below 51% to some lower level which would in no way reduce effective government control. If this is not politically feasible at present, then government must be willing to increase its capital contribution *pari passu* with fresh issue of capital, so that the government share of equity in these institutions remains at 51%.

A more flexible policy for allowing existing private sector banks to grow more rapidly is also urgently needed. While branch expansion is now more freely allowed, it remains linked to opening rural branches. With the growing scope for bringing banking to the rural areas through the system of banking correspondents, insistence on opening rural branches may not be as necessary as it once was.

3.6 Managing the Energy Challenge

The global supply of fossil fuels is expected to become much tighter in the years ahead, and prices of these fuels are therefore

likely to remain high, with a possible upward trend. Achieving high growth in this situation requires reducing the energy intensity of GDP while simultaneously taking steps to limit dependence on imports by increasing the domestic supply of energy from both conventional and non-conventional resources.

3.6.1 Reducing Energy Intensity

Reducing the energy intensity of GDP calls for rationalising energy prices and adopting non-price measures to improve energy efficiency. Action is necessary on both fronts and the agenda is large.

As far as rationalisation of energy prices is concerned, our energy prices at present are significantly below world prices and unless this is corrected, it is difficult to believe that energy efficiency can be sufficiently incentivised. The Integrated Energy Policy, adopted by the government in 2009, endorsed the principle that prices of imported energy inputs must be aligned with world prices, but this policy has yet to be fully implemented. Prices of motor spirit have been successfully decontrolled. However, diesel, which is four times larger than motor spirit, has only been decontrolled in principle. The decision is yet to be implemented. LPG and kerosene prices remain under administrative control and are currently set well below global levels. It is necessary to implement diesel decontrol as quickly as possible and to bring about a phased alignment of kerosene and LPG prices with world prices, while at the same time protecting the poor.

There is an understandable reluctance to raise kerosene and LPG prices because of the impact on vulnerable groups, but it must be recognised that the subsidy implicit in the present low prices of kerosene and LPG is completely untargeted. In the case of kerosene, it also leads to large-scale black marketing, adulteration and criminalisation. The best way of helping the poor to cope with higher prices of kerosene and LPG would be to shift to a targeted direct subsidy delivered to deserving groups linked to the implementation of a unique identification number. This option is being explored.

Coal is technically not under price control, but the nationalised coal companies have set domestic coal prices well below world prices, even after adjusting for the lower quality of Indian coal. The discrepancy between domestic coal prices and much higher import prices leads to an unwillingness on the part of power producers to import coal and keep lobbying for domestic coal linkages. This problem would not arise if domestic coal prices are equated with import prices. If that is not immediately feasible, the second best option is for Coal India to import coal to meet demands from the power sector, while also introducing a system of pooled pricing whereby the higher cost of the coal it imports is absorbed in a higher price charged by Coal India for coal supplied to all power plants based on the overall mix of domestic and imported coal. Over time, domestic coal prices must be adjusted in time with global coal prices reducing the need for price pooling.

Electricity prices are set by supposedly independent state regulators, but there is strong political pressure on regulators in many states to hold back price increases, even when these are justified by economic costs. This only leads to financial unviability of distribution system, which is under strain in any case. The system must be

allowed to function properly so that electricity prices are not artificially depressed, especially as coal prices are expected to rise.

Rationalising energy pricing along the lines spelt out above will encourage energy efficiency, but prices alone will not suffice to promote efficiency. Action on prices needs to be supported by a proactive use of non-price mechanisms. Regulation can be used to push major energy using industries to achieve internationally benchmarked levels of energy efficiency. We should also resort to standard setting and labelling for appliances, equipments, transport vehicles and buildings to encourage energy efficiency. Standards for buildings are particularly important because India has a leap-frogging advantage in this area since most of the commercial buildings likely to be in place by 2030 are yet to be built!

Finally, energy efficiency for the economy as a whole would be greatly helped by intra-sectoral shifts in the transport sector that would economise on energy. The most notable shift in this context is shifting freight from road to rail, and shifting from private to public transport in urban areas. These shifts can be facilitated by appropriate tax and tariff policies.

In the case of the Railways, it requires a shift away from the current practice of overcharging freight to subsidise passenger traffic. India's passenger fare to freight tariff ratio is 20% of what it is in China suggesting that freight tariffs should be lowered and passenger fares raised. These price changes need to be supported by action to build necessary freight carrying capacity in the Railways. The capacity has to be created urgently, in anticipation of increased financial strength from tariff reforms. A more proactive stance is also needed to promote PPP in railways, especially in container traffic movement.

3.6.2 Increasing Domestic Energy Supply

Steps to reduce energy demand have to be accompanied by strong action on the supply side to expand domestic production of petroleum, natural gas and also coal to avoid excessive import dependence. There are a number of policy gaps that need to be addressed.

Both petroleum and natural gas are open for investment by the private sector, including foreign investment, and private sector investors have a good record in discovery of new sources. However, the public sector oil companies currently bear a large part of the burden of keeping domestic petroleum prices low, because they are not given the full benefit of high oil prices. This reduces the potential surpluses available for investment by these companies. Rationalisation of energy price as discussed above will help the domestic effort to enhance energy supply.

Coal production is constrained by the fact that the industry is nationalised, although private investment is allowed in captive coal mines (i.e., coal mines linked to power plants or steel and cement plants). This window for private investment provides some flexibility and there is significant investor interest in this area. However, looking ahead, the policy for the coal industry should be liberalised – allowing private investment in non-captive mining subject to appropriate regulation for safety and environment standards. There are obvious political sensitivities here, but it has to be kept in mind that what is being proposed is not privatisation of Coal India but only allowing private sector mining. On present projections of likely domestic production, we will need to import

about 250 million tonnes of coal by 2016-17. Considering that the total world trade in coal at present is around one trillion tonnes, we should do everything possible to remove domestic impediments to production. There cannot be any rationale for allowing private investment in petroleum and natural gas, as we do, but not in coal.

We must also take steps to exploit the full potential of other energy sources notably nuclear, solar and wind power. The share of these sectors is small and will remain modest in the medium term but in the longer term they could become substantial. Expansion of nuclear power is an important element of India's long-term energy strategy and this has been facilitated by the recent agreement with the Nuclear Suppliers Group which gives India access to imported uranium, and also opens windows for other cooperation in this area. Plans for nuclear power all over the world are being reviewed in light of the recent Japanese experience at Fukushima, and lessons learnt will have to be incorporated in our own strategy. We should avoid knee-jerk reactions that might derail the nuclear power programme though we must clearly recognise the need to undertake a thorough review of our safety standards and benchmark them against evolving best practice.

India is also engaged in developing solar-based generation using both photovoltaic and thermal solar technology and a programme has been initiated to install 20,000 MW of solar power by 2020. This programme needs to be nurtured and supported in the hope of building a substantial domestic industry in this area. India has the potential to be a significant supplier of equipment to other countries.

Both nuclear and solar power are more expensive than conventional thermal generation and this means that while increased reliance on these sources will contribute to energy security, and also mitigation of climate change, it does imply higher energy costs. Costs can be expected to come down as technology develops further, but in the next decade at least all indications are that unit cost of energy will rise.

The energy challenge in the Twelfth Plan is how to deal with a situation in which global energy prices will be high and the cost of alternative energy sources will also be high. Our ability to grow rapidly in this environment depends critically on our ability to transmit the high energy prices to energy users in the economy, rather than keep the prices artificially low. Only then will users be incentivised to reduce energy intensity and energy producers will have the resources they need to expand investment in these sectors. Making this transition is not easy. It will be argued that energy prices should not be raised in a situation where inflationary pressure is high, but the need to control inflation is not a valid reason for holding back relative price changes which contribute to efficiency. In fact, raising energy prices will reduce the pressure of demand for other products and thus help moderate price pressures elsewhere. The poor certainly need help to handle the impact of higher energy prices, but it is better to do this through an income transfer rather than keeping energy prices artificially low.

3.7 Managing Water Resources

Managing water scarcity in the Twelfth Plan period is in some ways even more daunting than the challenge posed by energy. India's available supply of fresh water is the same as it was 5,000 years ago, and the population has grown and so has the GDP, with a concomitant

increase in demand for water. Until recently, official estimates showed the available supply of water to be well above total demand, albeit with areas of regional scarcity. More recent studies indicate that the demand for water at present is roughly equal to supply for the country as a whole and this near balance at a national level hides wide regional variations with acute shortages in many parts. Since growth in GDP implies expanded water use, the water situation can be expected to worsen rapidly. Already, there is evidence of excessive drawal of groundwater in many parts of the country leading to lowering of the water table and increasing salinity, which makes the water less usable for agriculture and harmful for health.

If things are left to business as usual, the situation will worsen steadily. The Twelfth Plan must signal the need for a radically new approach. Since water is largely a state subject, success depends critically on the state governments. They need to act on both the supply and the demand side.

Supply Side

On the supply side, action is necessary on several fronts including building storage dams, investing in watershed management to improve surface water retention and groundwater recharge, and forcing industry to treat waste water for reuse. Each of these involves costs and we need to prioritise between alternative investments keeping relative costs in mind. Traditionally, most of our resources have been absorbed by large irrigation projects. These are indeed important and need to be pursued to optimise storage, though their implementation needs to be greatly improved. In terms of prioritisation we need to do much more on watershed management projects, which involve one-tenth of the cost per hectare as compared to large irrigation projects, have fewer environmental problems, and generally provide a much higher return on investment. The central government should perhaps restructure its financial assistance to incentivise more action in watershed development.

Demand Side

Efforts at expanding supply are important but they will not suffice and they will have to be accompanied by efforts on the demand side to improve efficiency of water use. About 80% of India's water use is for agriculture and it is technically feasible with better agricultural practices, to reduce water use in agriculture by 40% to 50%. For example, the System of Rice Intensification (SRI) enables rice to be grown with much less water than in traditional flood irrigation. However, while it requires less water, SRI requires water to be given at the right time which calls for complementary investments in land levelling drip irrigation, etc. Additional costs have to be allowed to pass through into the system in the form of higher food prices. Over the longer term, agricultural research will have to factor in the need to achieve greater water efficiency by evolving crop varieties capable of dealing with water stress. This is particularly important given the likely impact of climate change.

One reason why managing the water crisis is more difficult than the energy crisis is that whereas most people recognise that energy has to be paid for, there is much less acceptance, or even understanding, of the need to price water. Policies are often enunciated on the principle that water is scarce and we must "conserve every drop", but if water is underpriced, there is no

incentive to achieve efficiency. Pricing of canal water in large irrigation projects is supposed to be based on the principle of covering operation and maintenance (O&M) costs, but in most places it is priced at levels which cover only about 15% of O&M costs. This eliminates any incentive to adopt less water-intensive cropping patterns in the command area, especially among upper end users. It also leads to poor maintenance of the canal system, which in effect means that although water is severely underpriced, farmers have no assurance that they will get the water they need at a predictable time. Farmers would be much better off paying higher prices for water, if this is accompanied by greater predictability of supply of a certain quantity at a particular time.

The first step in evolving a rational water policy is to make a scientific assessment of the available water resources in each basin in the country and then define basin specific strategies for water management. This mapping exercise should be undertaken on a priority basis, with the involvement of the science departments, and should be completed in the Twelfth Plan.

Rational water pricing is important and must be pursued but pricing by itself may not solve the problem since prices would have to be set at unacceptably high levels to get anywhere close to optimal water use. State governments would therefore be well advised to combine price rationalisation with establishment of statutory water regulators to determine water allocation for different uses such as household needs, agriculture and industrial use. The regulator must also have a transparent method of varying entitlements for different uses to reflect variation in water availability. Water regulators must be combined with the establishment of effective water user associations which genuinely participate in the management of this key common pool resource. A start has been made in some states, e.g., Maharashtra and Andhra Pradesh using somewhat different approaches, but we have a long way to go and we must learn from different experiments. One way of incentivising the process is to link central assistance for capital-intensive irrigation projects to the implementation of critical regulatory reforms in this area and to undertake parallel work on completing command area development.

A controversial issue that needs to be faced is whether a system of rational management of the country's water resources can be achieved without bringing in legislation that would empower the central government to act in this area. The Constitution provides that the central government can determine rational use of water in interstate rivers, provided Parliament passes a law for this purpose. This has never been attempted, and thus far, we have worked on the basis of consensus among states, subject to reference of differences to Judicial Tribunals. It is relevant to ask whether we can continue to operate in this fashion given the difficulties being faced in many interstate water disputes.

Regulating Groundwater

There is also a case for revisiting the various laws in place to regulate the use of groundwater. The present laws only provide for banning new tubewells in areas where the water table has fallen too far. This only confers a monopoly on existing tubewell owners who can pump as much water as they wish and sell it to other farmers. Free power or very cheap power for agriculture provides a wholly unjustified incentive for such activity. At the very least, state governments

should consider imposing a cess on electricity for agricultural use in all areas where the water level has sunk too low, and earmark the proceeds for groundwater recharge.

3.8 Managing the Urban Transition

Managing the urban transition will pose special challenges in the years ahead. India has been slow to urbanise, but this is expected to change with faster growth. The urban percentage of the population is currently around 30%, and is expected to reach 40% by 2030, implying an increase in numbers from 350 million today, to around 600 million. This will require a massive expansion in urban infrastructure, especially since only about half of those currently in urban areas are adequately served even by the current very low standards.

The resources needed to achieve this expansion in urban infrastructure are much larger than what the cities or local urban bodies can mobilise on their own.¹¹ Most of the revenue generated from economic activity in the country occurs in urban areas, but the revenue generated from this activity accrues to the central or state governments, and there is much less devolution to city governments than there should be. Cities and urban local bodies in India also have limited capacity to raise their own resources. It is possible to generate revenue through user charges for some services such as water, sewerage and urban transport, but a long tradition of fixing low user charges has limited the flow of revenues from these sources. High land values in urban areas could be used to leverage resources to finance urban infrastructure, particularly through PPP projects, but this opportunity has not been adequately exploited although the recent decision of the Andhra Pradesh government to adopt the PPP route for a metro in Hyderabad may provide a model for the future.

Even in the industrialised world, cities have rarely financed all the infrastructure they need themselves and national governments have contributed in various ways. The Jawaharlal Nehru National Urban Renewal Mission (JNNURM) introduced in the Eleventh Plan is a mechanism for channelling resources from the centre to the states linked to specific reforms in urban governance and finances. The results thus far are mixed, partly because of inadequate implementation capacity at the city level and also because of reluctance to pursue reforms. The JNNURM initiative will have to be expanded in the Twelfth Plan but it is also true that the cities and the states have to take on a much larger share of the burden than they do today the former through user charges and the latter through stronger devolution of resources.

Steps to close the financing gap for urban infrastructure have to be accompanied by improved governance structures at the city level. The system of city government at present is such that city governments are not effectively empowered to plan for infrastructure development. Critical decisions on the infrastructure needs of the metropolitan cities are typically made by the state governments, which necessarily respond to the electorate in the state as a whole. This has to change so that city government is in the hands of elected representatives responsible to their local electorate.

3.9 Environment Protection and Sustainability

A difficult issue which has to be addressed in the Twelfth Plan is how to achieve the transition to higher growth without inflicting unacceptable damage to the environment. The qualification "unacceptable" is

important since some stakeholders take an extreme position in which no damage must be done. That would rule out an enormous range of developmental activity, since all such activity alters the environment in some way. There is merit in taking an uncompromising approach in certain cases, e.g. tiger reserves and very select biospheres, but the general approach must be one of balancing conflicting objectives. This means trying to ensure that first the damage is minimised and second that well designed remedial steps are taken to ensure the people affected are suitably compensated and the environmental impact is suitably repaired and or compensated. In this context, stakeholder views must be ascertained but environmental prescriptions must be drawn by technical and scientific considerations and not perceptions or prejudices. Much of the present concern about the environment arises because our environmental protection mechanisms have failed to deliver on one or more these counts.

The threat to the environment posed by high growth arises from many different sources. These include (a) the need to meet the energy requirements of growth and the consequent demand for coal and hydropower, both of which could run into forest clearance problems even if we ignore for the present the longer term effect of carbon emissions, (b) the impact of industrialisation upon industrial effluents which leads to water pollution and of gaseous and particulate emissions which lead to air pollution, (c) the effect of expanding urbanisation and the consequent need to treat 100% of the sewage generated instead of only 30%, as at present, in order to avoid damage to our rivers and water bodies, and (d) the challenge of managing the large quantities of solid waste generated in cities in a manner that is environmentally benign. In addition to these endogenous sources of environmental stress, we also have to deal with external threats to the environment arising from climate change. This will require proactive steps to increase afforestation and to harness and manage our water resources better.

Some of what needs to be done is part of the agenda for managing the energy and water-related challenges discussed earlier in this paper. The measures related to price rationalisation in energy and water, and the various non-price initiatives in these areas, designed to increase energy efficiency and water use efficiency are critical for economic efficiency and will also help to moderate the environmental stress. These measures need to be supplemented by transparent and scientifically based environmental regulations which are strictly enforced. The Approach to the Twelfth Plan, which will be discussed in the National Development Council later in the year, provides an opportunity to start building a degree of understanding and consensus on these difficult issues.

It must be emphasised that environmental protection is not cost less. The problem arises because economic agents do not take into account the external costs of their actions, some of which fall on future generations. Such actions must be discouraged as far as possible and the residual damage must be repaired or compensated. This is best done by enforcing the "polluter pays principle". However, though often asserted in theory, this principle is largely ignored in practice. Tax policies often fail to reflect this principle – the total tax burden on commercial vehicles for example is higher than on private vehicles. The regulatory mechanisms for enforcing pollution controls in the states are also extremely weak. We need a comprehensive review of tax policies (including

state taxes) and also our pollution control mechanisms to ensure that the total impact is environmentally benign.

A new initiative introduced in the Budget for 2010-11 is the imposition of a cess of 5% on coal (both domestic and imported), the proceeds of which are earmarked to a separate fund to promote green energy. Mechanisms of this sort can be used to meet the cost of environment protection and are justified by the principle that the polluter must pay. Another environmentally supportive measure is the imposition of a cess on electricity for agricultural use to be imposed in areas where the groundwater has sunk too low, with the proceeds being earmarked for use in groundwater recharge in the same area. Because the benefits from the use of the proceeds are localised, it should be politically easier to justify the action.

3.10 Market Manipulation, Crony Capitalism and Corruption

Greater reliance upon market forces was a key element of the economic reforms and it has yielded tangible benefits in terms of higher growth and efficiency. However, it is also seen to have produced an increase in manipulative crony capitalism, and the corruption it brings in its wake. Corruption and corporate wrongdoing is obviously not a problem unique to India. In recent years there has been a great deal of attention internationally on corporate corruption and various types of illegality as exemplified by high profile cases such as Enron, Worldcom, Parmalat and Bernie Madhof. The financial crisis has also drawn attention to various instances of conflicts of interest and regulatory capture which call into question the notion that markets always promote efficiency.

Rajan (2010) has drawn special attention to two areas in India which are especially vulnerable to the charge of crony capitalism. These are land-related development and those areas where other scarce resources such as minerals or spectrum are to be allocated by the government through licensing. Non-transparency in land related issues has become a major problem which needs urgent attention. The problem surfaces in two different types of situations. First, land values in the major cities are hugely inflated because of highly non-transparent controls on land and there are large rents to be enjoyed by those who can obtain the relevant permissions to develop land. Non-transparent mechanisms for grant of such permissions inevitably lead to suspicion of corruption and cronyism. These areas of discretionary policy need to be comprehensively reviewed and more transparent mechanisms put in place. Second, acquisition of agricultural land for industrial development and for creating infrastructure presents many problems. The present Land Acquisition Act is hopelessly outdated and provides for highly inadequate levels of compensation often well below true market prices. Modernisation of this piece of legislation is urgently needed. This is currently under consideration and should be expedited.

Non-transparency in methods of allocating scarce resources such as minerals and spectrum has also given rise to criticism from many quarters. Allegations of corruption and cronyism have surfaced in both these areas, and they call for a thorough review of existing procedures. As a general rule, competitive bidding among qualified bidders provides the most transparent way of allocating scarce resources such as mining rights in known mineral bearing areas or spectrum. The absence of competitive bidding in the allocation of

2G licences has evoked intense criticism. In sharp contrast, the 3G auction, conducted in 2010, evoked no criticism at all, and is in fact a model which deserves careful study. There are circumstances where competitive bidding may not be the best method but the alternatives require very complex methods of evaluating the choices that have to be made, that invariably bring in discretionary decision-making, which can always become a matter of controversy *ex post*. Similar problems arise in allocating mining rights. A new Mines and Minerals Development Bill is currently under consideration in the government which must address those issue satisfactorily.

Government procurement procedures also need to be thoroughly modernised and made much more transparent as a means of reducing the probability of corruption and cronyism. OECD reports show that introducing such changes cuts costs by up to 25% in industrialised countries. Many countries have a public procurement law whereas in India government procurement is governed by rules. The government has appointed a committee to make recommendations in this area. Early action to modernise government procurement and make the procedures transparent, including through the adoption of e-procurement, would be a major step forward. It needs to be kept in mind that under the Right to Information Act, all these issues are available to the public *ex post*. There is no reason why the transparency should not be introduced *ex ante*.

3.11 Implementation of Government Programmes

In addition to influencing the pace and pattern of growth, and including especially its employment generating capacity, the strategy of inclusiveness also relies heavily on government programmes designed to promote inclusiveness. Programmes for health and education are particularly important in this context, and have been discussed earlier. In addition, there are a number of programmes which together constitute a structure of social security and provision of direct benefit for the poor.

The most important of the other programmes relevant for inclusiveness are (i) the supply of subsidised foodgrains through the PDS, (ii) the Mid-Day Meal Scheme for schoolchildren, (iii) the Integrated Child Development Services (ICDS) which provide nutrition and pre-school education for the zero to six-year age group and also for adolescent girls, (iv) the National Social Assistance Programme (NSAP) which provides an old age pension, plus a pension for widows and disabled persons, (v) the Mahatma Gandhi National Rural Employment Guarantee, which provides assured employment for 100 days at the notified minimum wage, (vi) the National Rural Drinking Water Programme which aims at covering villages which do not have an assured supply of potable water, (vii) the Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) which extends electricity to all uncovered villages and provides free connection to all BPL families, and (viii) the Indira Awas Yojana (IAY) which provides assistance to the rural poor to build *pucca* homes. The total provision for these programmes in 2010-11 was Rs 1,55,000 crore or about 1.9% of GDP.

There is broad agreement that these programmes are aimed at desirable objective but there is a great deal of scepticism about whether these programmes are being implemented in a manner that will ensure that these objective are actually realised. Complaints of leakages, inefficiency and corruption are widespread and while

these are sometimes advanced by those who do not sympathise with the welfare objectives of the programmes, there is no doubt that there is also a genuine problem of implementation.

It is important to note that the central government only finances these programmes, and actual implementation is carried out by state government agencies.

As one would expect, the effectiveness of implementation varies greatly from state to state, with many examples of good implementation but also examples of abject failures. These failures can be traced to one or all of three problems: poor design ab initio, underfunding and poor implementation. In practice all three are probably present to some degree.

Problems of poor design and inadequate funding can and should be addressed by the central government. Central government guidelines are often inflexible and not tailored to the requirement in particular states. Furthermore, many areas involve cooperation between different arms of government, e.g. of agriculture, irrigation and rural development or the departments of health, education and women and child development. Unfortunately, government typically works in silos which makes effective interdepartmental cooperation very difficult. As far as adequacy of funding is concerned, scarcity of resources is a genuine problem. The solution lies in better prioritisation. It is much better to fully fund schemes that are working well and squeeze other rather than spread resources thinly. However, this is easier said than done and enforcing prioritisation in this way will be a major challenge in the Twelfth Plan.

Improving implementation on the ground has to be a major objective in the Twelfth Plan. Opinions vary on how this can be achieved. A committed political leadership at the state level, working with an effective administration, can obviously make a big difference. Devolution of decision-making and accountability to panchayati raj institutions (PRIs) is also a potential instrument improving accountability. This is in line with the 74th Amendment which provided for devolution of functions, finances and functionaries from the state government to the PRIs. Some progress has been made in devolution, but most state governments have devolved functions with very little devolution of either funds or functionaries. The central government can perhaps help in this area by structuring its schemes of assistance in a way which increases the role of the PRIs. For this to work, it will also be necessary to build capacity at the PRI level. Earmarking some portion of central funds for capacity building may be necessary.

Greater participation by civil society organisations promoting greater involvement of the community, with a greater awareness of its rights, will also help. The Right to Information Act is an important new initiative which empowers civil society and individual stakeholders to hold government at all levels accountable.

Conclusions

As stated at the outset, the purpose of this paper was not to present firm conclusions, but rather to pose the issues we need to address in preparing the Twelfth Plan, in the hope of

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provoking a wider debate. However some broad conclusions can be drawn.

The economy will enter the Twelfth Plan period in an environment of great promise but, also one that presents major challenges. We have done well on the growth front, but not so well on inclusion, though it is possible that when the data for the entire period become available, we may find that the situation is better than currently envisaged.

Much of what needs to be done to accelerate GDP growth to 9% or so will be done by the private sector, but the central and state governments have a crucial role to play in providing a policy environment that is seen as investor friendly and is supportive of inclusive growth. A credible time path for bringing the fiscal deficit under firmer control must have top priority. This must be accompanied by continued progress on reforms that are in the pipeline in many areas, especially those that are likely to generate an early investment response. A financial sector capable of mobilising and deploying resources efficiently is extremely important and there are many steps that can be taken in this area that are entirely in the domain of the central government.

The government's own resources have to be deployed with a clear sense of priority. In this context, health and education and critical infrastructure development, especially in water management and rural infrastructure, and infrastructure development in backward areas must have top priority. For other infrastructure

areas the maximum use must be made of PPPs both by the central government and by the states. Impediments in the implementation of large projects should be speedily removed.

Four critical challenges facing the economy in the Twelfth Plan, which are perhaps more serious than they were at the start of the Eleventh Plan, are the challenges of (a) managing the energy situation, (b) managing the water economy, (c) addressing the problems posed by the urban transformation that is likely to occur, and (d) ensuring protection of the environment in a manner that can facilitate rapid growth. Difficult choices have to be made in each of these areas and both the central government and the states have an important role in bringing about a successful outcome. The prize, if we succeed, is that we will have put India in the small group of countries that have achieved the transition to sustained high growth and elimination of poverty.

Finally, the efficiency in implementation of projects on the ground needs to be greatly improved. Most of what needs to be done in this context rests with state governments but the central government must find ways of improving project design, prioritising resources to fund well designed interventions that work, devolving resources to lower levels and helping build capacity. Evidence-based evaluation is critical for redesign and prioritisation. We need to greatly strengthen capacities in the area and the proposed Independent Evaluation Office which is expected to be set up during 2011-12 will be a major step in this direction.

NOTES

- 1 This led some scholars – notably Rodrik and Subramaniam (2004) – to argue that the strategy of giving freer play to market forces and opening the economy to world trade and capital flows, was perhaps not as important as was made out by proponents of the reforms. I have argued against this interpretation in Ahluwalia (2009).
- 2 The report was largely based on the notion of convergence which holds that countries at lower per capita income have low capital per person endowments and are therefore likely to have much higher marginal product of capital which will ensure a flow of capital to these countries and faster growth than richer countries.
- 3 The Tendulkar Committee was appointed by the Planning Commission in 2009 to make recommendations on whether the poverty lines and the method of indexation being used by the Planning Commission following the methodology recommended by the Lakdawala Committee needed modification. The Tendulkar Committee concluded that the urban poverty lines were broadly appropriate but rural poverty line for each state needed to be modified to make the rural poverty line more comparable with the urban poverty line. The result of the change in methodology is that the urban poverty numbers are more or less unchanged but the rural poverty line has been raised and the proportion of the population below it has also increased. The Tendulkar Committee specifically warned that for inter temporal comparisons the same method must be used for both observations.
- 4 For example, India's infant mortality rate of 50 is higher than of our neighbour Bangladesh, which has an IMR of 41. Vaccination rates in Bangladesh are also much higher.
- 5 The proposition that quality of education in private schools is better than in government schools is widely believed but not easy to establish statistically because if the kind of parents who are likely to encourage their children to study prefer to send them to private schools, then private schools will do better. It is therefore necessary to make comparisons after controlling for this.

Studies conducted by ASER have attempted to do this and they found that private schools remain better after controlling for the parental factors but the difference is reduced.

- 6 See Kapur et al (2010).
- 7 Brazil, for example, grew at an average rate of 9% for 20 years in the 1960s and 1970s, and then collapsed to an average of 2% growth for the 1980s and 1990s. It has done better in the current decade, but even then, the average growth rate has been a little over 3% per year. The south-east Asian high performers of yesteryear have also found it difficult to get back to the high growth they experienced before 1997.
- 8 The IT sector is perhaps an exception to this generalisation since it has been highly dependent upon markets in industrialised countries. However, given the competitiveness of the sector, the impact may not be very large.
- 9 This brings out the fact that the fiscal stimulus in India was primarily a stimulus to consumption and not investment. Had petroleum prices been adjusted but the fiscal deficit allowed to widen because of higher levels of investment in say infrastructure, it would have contributed more to medium term economic performance. The choice between a consumption-based stimulus and an investment-based stimulus is a key aspect of the design of fiscal stimulus.
- 10 This includes creation of 30 new central universities, 8 IITs, 20 IIITs, 7 IIMs and 3 IISERs.
- 11 For an assessment of the investment requirements in the urban sector over a 22-year period see the Report of the High Powered Expert Group Estimating the Investment Requirements of Urban Infrastructure, Ministry of Urban Development, 2011.

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