



Agricultural Strategy for Eleventh Plan: Some Critical Issues



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INTRODUCTION

1.1 The Approach Paper to the Eleventh Five Year Plan prepared by the Planning Commission, suggested a road map for 9% per annum growth for the economy as a whole, and an agricultural growth target of 4% per annum during the plan period. Agriculture is not only an important driver of macro-economic performance; it is an essential element of the strategy to make growth more inclusive. The Approach Paper emphasised that a reversal of the declaration in agricultural growth witnessed after 1996 is a pre-requisite for success of the 11th Plan. Although agricultural performance has improved after 2004-05, much more needs to be done.

1.2 The specific problems of Indian agriculture, and concerns relating to farmers' welfare, have been addressed in the five Reports of the **National Farmers Commission** under chairmanship of Prof. M.S. Swaminathan*. These problems and concerns have subsequently been considered by other Committees, most prominently the **NDC Sub-Committee on Agriculture and Related Issues** which was chaired by the Agriculture Minister and had eight Working Groups**. The Planning Commission had also set up twelve 11th Plan Working Groups*** on agriculture. Based on all these inputs, the **Steering Committee on Agriculture** for the 11th Five Year Plan has in its conclusions and recommendations taken an overview on the broad direction of policies needed for agriculture in the 11th Plan.

1.3 This paper summarises in very broad outline the main conclusions and recommendations of the above Groups/Committees on the Eleventh Plan strategy to be adopted for the agriculture sector by the Central and State governments in order to achieve a faster and more inclusive growth.

SOME MAJOR CONCERNS

2.1 Deceleration in agriculture growth: In the last decade there has been a sharp deceleration in Indian agriculture with the growth rate of agriculture GDP slipping from 3.62% during 1984-85 to 1995-96 to less than 2% in the period from 1995-96 to 2004-05. Further, state-wise trends indicate that the largest slump occurred in those areas/states that are predominantly rainfed (Table 1).

* National Farmers Commission Reports: Serving Farmers & Saving Farming, Crisis to Confidence, 2006: Year of Agricultural Renewal, Jai Kisan: A Draft National Policy for Farmers, Towards Faster and More Inclusive Growth of Farmers' Welfare.

** NDC Sub-Committee Working Groups: Irrigation, Dryland Farming, Animal Husbandry and Fisheries, Agro-climatic Zonal Planning, Marketing, Credit, Technology and Land and WTO issues.

*** XIth Plan Working Groups: Crops, Horticulture, NRM, Marketing, Research, Agro-climatic Zonal Planning, Animal Husbandry, Fisheries, Agri-Extension, Gender, Risk Management, Credit.

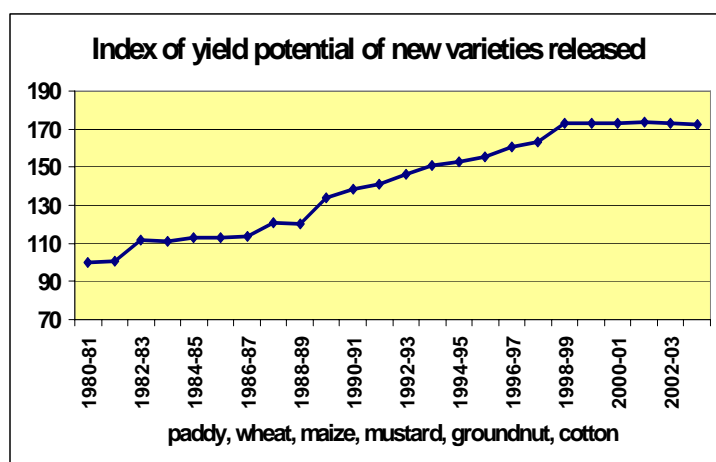
Table 1: Growth rates of Agriculture SDP, states ranked by % of rainfed area

State	Growth rate in NSDP Agriculture		Rainfed %	State	Growth rate in NSDP Agriculture		Rainfed %
	1984/5 to 1995/6	1995/6 to 2004/5			1984/5 to 1995/6	1995/6 to 2004/5	
Punjab	4.00	2.16	3	Gujarat	5.09	0.48	64
Haryana	4.60	1.98	17	Rajasthan	5.52	0.30	70
Uttar Pradesh	2.82	1.87	32	Orissa	-1.18	0.11	73
Tamil Nadu	4.95	-1.36	49	Madhya Pradesh	3.63	-0.23	74
West Bengal	4.63	2.67	49	Karnataka	3.92	0.03	75
Bihar	-1.71	3.51	52	Maharashtra	6.66	0.10	83
Andhra Pradesh	3.18	2.69	59	Kerala	3.60	-3.54	85
All India	3.62	1.85	60	Assam	1.65	0.95	86

2.2 A particular area of concern is foodgrains, whose production during 10th plan was less than during 9th plan. Per capita annual production of cereals has declined from 192 kg in 1991/1995 to only 174 kg in 2004/2007 and of pulses from 15 kg to 12 kg. This means that **per capita foodgrains production is now at 1970s levels**. Although offset to some extent by increase in per capita availability of other food products this raises valid concerns on **food security**. We must ensure growth in foodgrain production of at least 2 percent per annum in the 11th Plan. Horticulture is the key driver for higher value addition and where output must grow at about 6% per annum for overall agricultural growth to reach 4%. Data on fruits & vegetables production is weak, but available evidence suggests sharp deceleration in recent years. National Horticultural Board data shows growth slowing from 5.5% per annum during the 1990s to 2.5% during 2000-01 to 2005-06, while National Accounts place 2000-06 growth at only 1.2% per annum.

2.3 Technology Generation and Dissemination: With availability of land and water fixed, the goal of 4% growth in agriculture can be achieved only by increasing productivity per unit of these scarce natural resources through effective use of improved technology. The research system has so far focused mainly on breeding varieties that increase the yield potential of individual crops by enabling more intensive use of inputs. But although such research did increase potential yields substantially in the past, it put less emphasis on the efficient and sustainable use of soil nutrients and water and is no longer leading to adequate outcomes. Analysis of new varieties released of major crops (rice, wheat, maize, groundnut, mustard and sugarcane) shows significant deceleration of the growth of yield potential, with negligible increase over the last decade (Table 2). This **technology fatigue has to be addressed urgently by changing research priorities suitably**.

Table 2: Existence of Technology Fatigue and of Yield Gaps



YIELD GAPS:

Wheat:	Punjab	6%
	M.P.	84%
•Maize:	Gujarat	7%
	Assam	300%
•Jowar:	M.P.	13%
	Karnataka	200%
•Mustard:	Haryana	5%
	Chattisgarh	150%
•Soybean:	Rajasthan	7%
	Karnataka	185%
•Sugarcane:	A.P.	16%
	M.P.	167%
•Rice:	Over 100% in Assam, Bihar, Chattisgarh & UP	

2.4 At the same time, frontline trials of various research departments provide clear evidence of large gaps between what can be attained at the farmer's field with adoption of technology as compared to what is obtained with existing practices. In other words, there is a large potential for raising output with effective dissemination of existing technology. This must be the main source of 11th plan yield growth since overcoming technology fatigue, although first priority, will take time. Moreover, since yield gaps vary considerably from crop-to-crop and from region-to-region, **the 11th plan strategy must focus on specific requirements of each agro-climatic region and will require much stronger linkages between Research extension and farmers.**

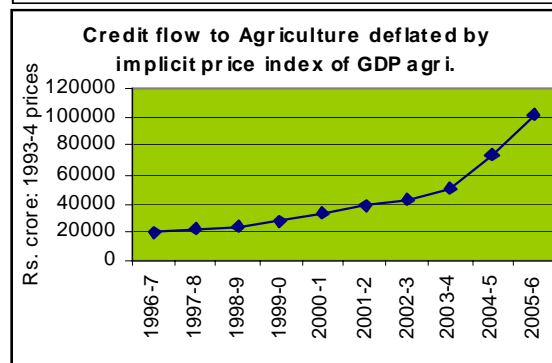
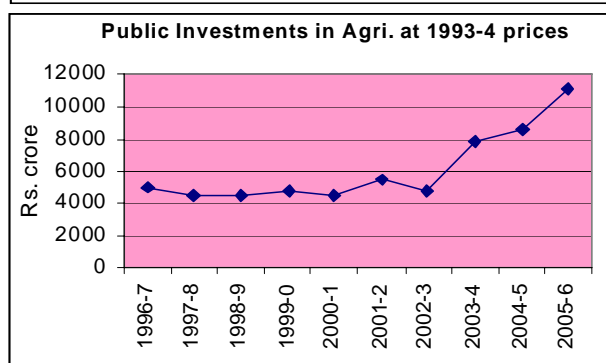
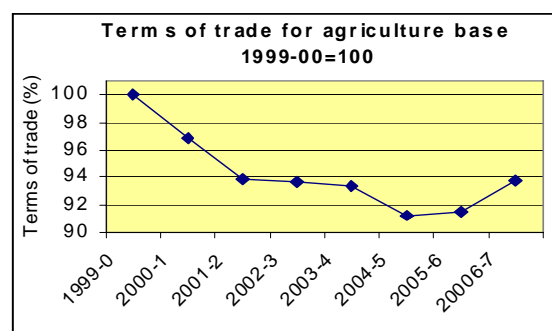
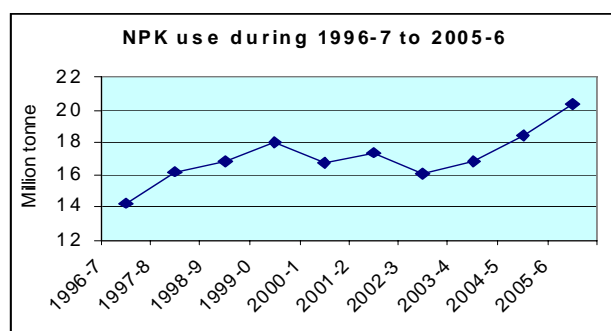
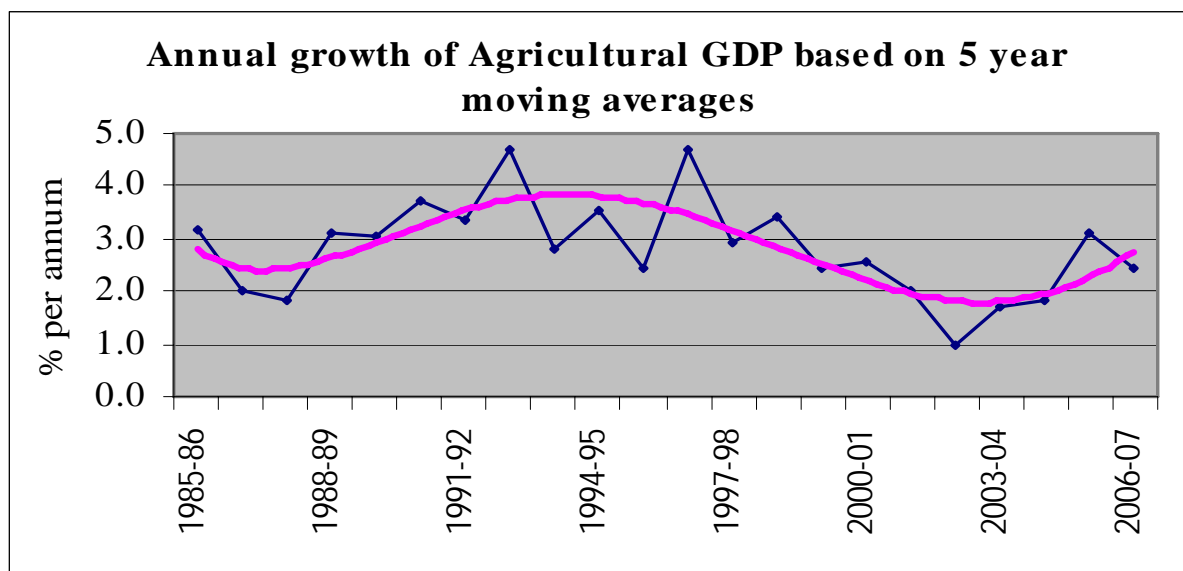
2.5 Degradation of Natural Resources: The pressing need to accelerate agriculture growth should not be at the cost of sustainability of our natural resource base, which is starkly limited. This is compounded by degradation of soil and overexploitation of ground water. Deforestation has affected both soils and water. Besides watershed development in watersheds where agriculture is important, a concerted effort is needed to afforest upper catchments at higher elevations of river basins. In addition to erosion, salinity and alkalinity, our soils are losing soil carbon and micronutrients due to irrational and unbalanced fertilizer use. This must be addressed urgently since nearly 2/3^{rds} of our farmlands are in some way either degraded or sick and only about 1/3^{rds} are in good health. Rapid expansion of groundwater use for irrigation was a key factor in the relatively rapid growth of agriculture between the mid-1960s and late-1980s. But further expansion should be strictly monitored, especially in regions where aquifer levels have dropped causing concern about future sustainability. **Action on these environmental fronts cannot wait, especially in the face of a possibly looming adverse climate change due to global warming.**

2.6 Subsidies vis-a-vis Investments and Farm Support Systems: An unfortunate trend over the past two decades has been that budgetary subsidies to agriculture have increased from around 3% of agriculture GDP in 1976-1980 to about 7% in 2001-03. During the same period, public investment in agriculture declined from 3.4% of agriculture GDP to 1.9%. Most of the subsidies are on fertilizer, power and irrigation water and have actually contributed to the degradation of natural resources noted earlier. Further, a considerable amount of Plan expenditure on agriculture is not on investment but on subsidies not accounted for in the above list. Although the plan share in States' total expenditure on Agricultural and allied sectors has improved considerably from a low just after Vth Pay Commission, much of this represents increase in plan subsidies at cost of essential staff, particularly in the co-operative sector and the extension system. With hindsight, it appears that the policy of restraining new hiring may have been excessive, as is evident from the reduced reach of co-operatives and the age composition and high vacancies among extension staff. Even a relatively small percentage reduction in subsidies can finance relatively large increase in public investment in crucial areas such as soil amelioration, watershed development, groundwater recharge, surface irrigation and other infrastructure and also allow substantial expansion in the reach of critical farm support systems.

2.7 Agriculture's Terms of Trade and farm price volatility: An important reason for recent farm distress was that farm prices fell even as farm production decelerated. After improving steadily from 1980 to 1997, the terms of trade turned against agriculture between 1999 and 2004 and reduced profitability of farming quite sharply. This occurred partly because domestic food demand slowed down and partly because Indian farm prices became more aligned with corresponding international prices at a time when world commodity prices were on the decline. Moreover, farmers are now subject to greater price risk since variability of world prices is much higher. A long-run road map is required to decouple farm protection as envisaged in WTO, but in the short-run it would be much more economic to fully use the flexibility provided by our relatively high bound tariffs and devise MSP operations accordingly. However, we have neither used tariffs as flexibly as possible nor extended MSP operations adequately. Modern food retailing offers the prospect that lower marketing costs could lead to lower prices for consumers and higher realisation for farmers. These economies need to be exploited fully to increase income of farmers. However, if front-end investment outpaces the backward linkage with farmers, the outcome in the short run may simply be higher imports. Efforts must be made to ensure rapid development of backward farm linkages.

A GLIMMER OF HOPE

3.1 Despite the above realities, it would not be over-optimistic to say that overall agricultural growth may be turning the corner as evidenced not only by output growth but also trends in the public investment in the farm sector, credit flow, input use and terms of trade as brought out in the graphs below.



3.2 Realising 4% Growth: Taking into account all the significant factors that affect growth, the 11th Plan Steering Group has assessed that 4% growth per annum in agriculture is possible. The main factors expected to contribute to 4% growth in the 11th Plan (with approximate component contributions in brackets)

are increased investment (2.5%) and higher area under fruits and vegetables (1.0%), with greater use of fertilisers and other inputs contributing the rest. The most significant factor will need to be public investment, including on filling yield gaps. This would need to average at least 4% of agricultural GDP during the 11th plan, and requires that public investment increases at a minimum of 12% per annum in real terms from its 2006-07 level. This is, however, only a necessary condition and much more is required than this.

THE WAY AHEAD

4.1 All the expert groups mentioned above agree that the Eleventh Plan strategy should not confine itself only to the 4% growth target but must also address the longer-run issues. These converge on the following:

- Get technology moving and ensure access of farmers to this
- Increase investment, efficiency and systems support, rationalise subsidies
- Diversification is crucial for income growth, but do not forget food security
- Inclusiveness requires that the poor get better access to land, credit and skills

Technology:

4.2 The intensively irrigated crop production regions that currently hold the key to food security of the country are experiencing technology fatigue and are under increasing environmental stress. Faster growth in these regions will require a technological breakthrough that is still not in sight. In other parts of the country, existing technologies in several crops have considerable potential to raise yields over the next few years and this, along with diversification to higher value crops, must be the main source of 11th plan agricultural growth. This requires more focused location specific adaptive research and discrimination of best practice. However, the strategic priority should still be to shift the production frontier in order to sustain longer- term growth. This is vital since the more efficient technologies evolving elsewhere are being developed with the benefit of intellectual patent rights protection and are no longer global public goods. Looking ahead we must also prepare to cope with climate change from global warming.

4.3 Immediate action points in this area are:

- Priority in agriculture research should be given to **strategic research**.
- Research priorities have to shift towards evolving cropping systems suited to various agro-climatic conditions and towards enhancing the yield potential in rainfed areas through development of drought and pest resistant varieties.
- The ICAR must restructure accordingly, and increase its accountability.
- SAUs also need to be made more accountable, and strengthened to develop, refine and promote location specific technologies.

4.4 All this will require more resources, and public expenditure (both plan and non-plan, Centre and States) on agriculture research will need to **increase from around 0.7 % of agriculture GDP at present to 1% by end of 11th Plan.** To avoid business as usual, the additional resources should be conditional on:

- Improving the governance of the National Strategic Research Fund within the Ministry of Agriculture. An **expert body independent of the National Agricultural Research System** (NARS) can assess potentials and constraints, including climate change, and set the priorities for the much enhanced strategic research required. The fund should be able to finance research not only within ICAR and NARS, but also in UGC Universities, CSIR laboratories and in private research institutes.
- Linked to this, creation of high-level expert committees at the Centre and in States to oversee an expanded but incentivised support to State Agriculture Universities (SAU) to revitalise these for location-specific research and to enable these to forge stronger direct links with farmers through the extension machinery and village-level Knowledge Centres

Irrigation:

4.5 Irrigation accounts for by far the largest part of total investment in the agricultural sector. Overall public investment on irrigation (Centre and States together) during 10th plan was Rs.96,720 crores, resulting in addition of 8.8 million hectares potential. With this, 42 million hectares of potential have been created under Major & Medium irrigation at end of 10th plan out of an ultimate potential of 58.5 million hectares, and corresponding figures for minor irrigation are 60.4 and 81.4 million hectares respectively.

4.6 The 11th Plan envisages creation of an additional potential of 16 million hectares at an estimated required outlay of about Rs.2,10,000 crores. Since irrigation is a State subject, most of this (about Rs 172,000 crore) has been earmarked for financing by States, and an analysis of States' own preliminary 11th Plan allocations shows that this might actually be exceeded. Further, although financial resources appear adequate except in some poorer States, guidelines for the Accelerated Irrigation Benefits Programme (AIBP) have already been changed to expand its scope and to increase the Central share for selected areas.

4.7 The main outstanding issues on Major & Medium irrigation relate to inter-State projects and on whether Central guidelines on benefit-cost ratios and dependability need to be relaxed. However, efficiency of investments in this area needs to be subjected to critical scrutiny. For example, although 10th Plan targeted expenditures were in fact exceeded, the addition to potential created was only 50% of target and land use data shows no increase in irrigated area. created is not actually utilized, partly because water use is much more intense

than planned and also because some existing irrigated area is going out of the net because of poor maintenance or decay of the irrigation system.

4.8 With most States willing to commit adequate funds, but with actual water use lagging well behind the potential created, it needs to be recognised that the scope for new large surface irrigation projects is getting smaller and that the focus should be on completing ongoing irrigation projects and on modernising existing ones. In particular, much greater emphasis is required on investments in physical rehabilitation and on modernisation of systems essential for improving the efficiency of water use. With this in view, it is suggested to:

- Increase the allocation to AIBP during 11th Plan but with much more effective monitoring using remote sensing data to incentivise the Central funds flow to the States
- Improve contract management through “fixed-time fixed-cost” contracts
- Consider at least one model physical modernisation project in each State
- Put much more emphasis on Participatory Irrigation Management (PIM), including collection and retention of water rates by water user associations, to reduce the gap between potential created and the actual utilised
- Prepare comprehensive water balance accounts of current use, both at the system level and at the level of water user associations, to highlight the extent of avoidable waste and identify possibilities of reducing this through better regulation of water deliveries and conjunctive use
- Restructure the subsidy structure on micro-irrigation equipment to enable promotion of community sprinkler systems by water user associations
- Use NREG/BRGF funds to supplement Command Area Development

4.9 As far as **groundwater** is concerned, it is necessary during 11th plan to take maximum advantage of the still abundant availability in Assam, Bihar, Chattisgarh, Orissa and parts of Jharkhand, Uttar Pradesh and West Bengal. The on-going programme of rural electrification in this region under Bharat Nirman is likely to help, although it is vital to ensure both that adequate credit is available for pump-sets and that electricity rates are not reduced to the unsustainable levels reached elsewhere. At the same time, a sharp focus is required on making the use of groundwater sustainable in other parts of the country where withdrawal currently exceeds recharge. For this:

- There must be regular and accurate assessment of actual groundwater use in both rural and urban areas to correlate this with recharge and extraction
- Separation of feeders for domestic and agricultural power and its timely but controlled supply for irrigation can be an effective mechanism to regulate water use
- Ways must be explored to empower and entrust village communities with the right and responsibility to collect electricity charges and in dark blocks

to regulate access through, for example, obligation on groundwater users to undertake rainwater harvesting and groundwater recharge

- There should be a wider national debate on the more general issue of groundwater ownership

Natural Resources Management and Watershed Development:

4.10 With surface irrigation nearing ultimate potential, much of the country's agricultural area is likely to remain rainfed. As noted earlier, it is this area that has witnessed the largest deceleration although the untapped potential from existing yield gaps is high. Government has now constituted the National Rain-fed Areas Authority (NRAA) to bring focus to the problems and potentials of these huge but hitherto neglected areas. Up to now the main interventions have been through special area development programmes and various watershed development schemes of different Ministries and agencies such as NABARD. But, although it is well recognised that agriculture development in rain-fed areas should ideally converge on the watershed wherever possible, the actual approach to this holistic vision has remained rather fragmented. The NRAA is expected to harmonise across the different Central government efforts and offer expert advice to States on how to integrate these in their own agricultural Plans.

4.11 During the 10th Plan, around 22 million hectares of degraded land were reportedly treated under these various schemes at a cost of Rs 8810 crs. Unlike irrigation, this implies higher area covered at lower cost than original 10th plan targets. Moreover a recent assessment of watershed development projects suggests that outcomes may have been much better than generally recognised (average benefit-cost ratio about 2), with performance significantly better where people's participation is high and, importantly, in joint projects of State and Central governments than those of the Centre alone.

4.12 For the 11th plan, both the NDC and XIth Plan Working Groups have recommended accelerating the pace of watershed development to cover about 38 mha. Moreover, to sustain people's participation, both Working Groups have suggested longer treatment and inclusion of a **farming systems component**. With the higher unit costs envisaged, and including soil conservation measures, this would require a minimum investment of Rs 36,000cr on Natural Resources Management (NRM) during the 11th plan. It should be noted that this magnitude of investment is feasible if the combined investment on irrigation and NRM increases at 12% per annum from their 2006-07 base, but that this would only be possible if States progressively shift to NRM some of the resources currently expended on irrigation.

Rationalizing subsidies and strengthening Input and Support Services:

4.13 As discussed earlier, the problem of deteriorating soil quality is also related intimately with the current pattern of imbalanced fertiliser use, which in turn is an outcome of the presently unbalanced and irrational subsidy structure that encourages excessive nitrogen use at the cost of other nutrients, including micronutrients. There is an urgent need to rationalise subsidies across nutrients and also examine methods by which the delivery of some part of the presently huge subsidies can be transferred from fertiliser producers to farmers directly.

4.14 However, it should also be recognised that any rationalisation of fertiliser subsidies would involve an increase in price of some products, particularly urea. This will be difficult in the present context of low farm profitability and farmer distress unless compensated for by visible reduction in other costs and by improvement in the quality and effectiveness of public services. In particular, it may be easier to reduce unbalanced fertiliser use if soil health awareness is promoted through a **credible system of soil testing** and of advice linked to this.

4.15 **Agricultural Extension** is the key element for such advice to be given, and this is also critical for narrowing the more general knowledge gaps that exists in our agriculture. Given the current state of extension services, it will be necessary for States to begin filling up field level vacancies in extension and provide much better training, including at SAUs. At the same time, the Centre's plan support to KVKs & ATMAs should be synergised and made part of a comprehensive and participatory district planning process. Alternate delivery channels spanning Rural Knowledge Centres (RKC), ICT based extension, farmer-to-farmer extension, NGOs and the private sector should also be promoted simultaneously. Unfortunately, extension advice is almost totally absent in animal husbandry. Special efforts need to be made in this area.

4.16 There is also a need to ensure adequate and timely supply of the quality inputs recommended. Of these, the **supply of seed** needs the most urgent attention. There is a need to revamp the seed production and distribution system by strengthening public sector seed agencies and by involving private trade in seed multiplication and distribution system. States must simultaneously strengthen their systems to check quality of inputs since there is evidence that sale of spurious seed, fertilizer and farm chemicals is on the rise.

4.17 An associated issue is that of **credit outreach**. Farm credit has expanded very significantly in recent years, but this has not prevented decline in the number of credit accounts, particularly small accounts. This is a major flaw in the present state of our agricultural credit system, reflecting mainly the poor financial health of the co-operative sector. In order to revamp the co-operative credit structure, all **States must act urgently to implement the Vaidyanathan**

Committee recommendations. Early reports are promising, but monitorable deadlines must be set to meet the required commitments.

4.18 More generally, promoting financial inclusion is higher priority than the demand for lower interest rates. Both the NDC and 11th Plan Working Groups have suggested steps towards universal banking, including group lending and a rural credit information system aimed at smart KCC cards for all. These have also noted that although arbitrary debt waivers should be avoided, the present situation on farm debt requires that Banks and State governments act together to set up some appropriate formal mechanism to expedite One Time Settlements.

4.19 With Indian agriculture still dependent on the monsoons, mitigating the recurrent problem of farm debt requires a proper system of risk management. The existing National Agricultural Insurance Scheme (NAIS) is a plan scheme with very limited coverage and there is strong demand to expand this massively and to reduce the basis of assessment from block to the village. The 11th Plan Working Group has broadly supported a modified NAIS drawn up by DAC on these lines but involving actuarial premiums that would need to be subsidised. This involves high cost and also issues of moral hazard. Further, new insurance providers and products are emerging and could offer more choice than currently. The NDC Working Group has therefore suggested that expansion of insurance should be a State initiative, which the Centre should support through an ACA/CSS, while retaining the existing NAIS on the non-plan side.

4.20 Another aspect of risk mitigation is to reduce price uncertainty. Minimum Support prices exist, and farmers in every region need to be supported in at least one food and one non-food crop in each marketing season. Also, as mentioned earlier, the flexibility provided by our WTO bound tariffs should be used fully to protect farmers from international price volatility.

Diversification and Food Security

4.21 Available demand projections suggest that foodgrains demand, including for uses other than for direct human consumption, will grow at 2 to 2.5% per annum during 11th plan, traditional cash crops such as oilseeds, fibres and sugarcane at 3 to 4% per annum and livestock and horticulture at 4 to 6% per annum. Clearly, diversification towards horticulture and livestock will have to be a very major ingredient to achieve overall 4% agricultural growth. Such diversification not only offers opportunity for raising farm incomes significantly, employment elasticity for these activities is quite high and these are also likely to put less pressure on natural resources.

4.22 Nonetheless, an immediate priority is to meet the **food security** concern stemming from stagnation of foodgrains, which still contribute about 65% of

total calorie consumption in the country. Although foodgrains are projected to have the lowest rate of demand growth, continuation of present stagnation in output would mean imports in excess of 20 million tonnes by the end of 11th plan. Given current trends in world supply-demand balance, especially the increasing use globally of cereals for bio-fuel production, this carries the danger of very large increase either in domestic foodgrain prices or of the fiscal deficit in case imports are subsidised. In view of this, and the large existing potential from yield gaps in Eastern and Central India, **it is necessary to immediately launch a Central sector scheme in mission-mode aimed at increasing foodgrains production by at least 20 million tonnes by the end of 11th plan.** Such a programme is necessary not only for food security but also to sustain the process of income growth through diversification which might otherwise stall if relative prices move sharply in favour of foodgrains. As was pointed out in the 11th plan Approach paper, foodgrains yields per hectare need to increase by at least 3% per annum to make possible the shift of area to high value crops necessary for 4% overall agricultural growth. Also, a considerable part of the additional foodgrain demand would be feed for livestock and poultry.

4.23 In addition to meeting the huge gap between requirement and availability of feed and fodder, livestock and fishery development need a major step-up in infrastructure and policy support. There is need to massively expand the breeding infrastructure for cattle and buffalo, utilising scope for improvement through selective breeding using better quality indigenous stock. India needs a comprehensive disease control programme, including for small ruminants and poultry, and a definite policy to cope with the growing problem of surplus male cattle. In fishery, there is need to establish more hatcheries and ensure stockable sizes of seed for ponds, tanks and reservoir sites. All this would require much more commitment from States than is indicated by their current annual plan allocation of only around Rs 2100 crore for all these activities, including dairy. The Centre, too, will require stepping up its efforts, especially in areas of feed/fodder supply, disease control and in ensuring progeny testing and traceability. The recently set up National Fisheries Development Board has huge potential and requires being up-scaled rapidly. It is also necessary to reduce the present duplication of efforts between the Department of Animal Husbandry and the National Dairy Development Board (NDDB) and resolve the associated disagreements on a long-term strategy for dairy development. The NDDB has proposed a National Dairy Plan. This needs to be considered seriously by the States and their views incorporated in the 11th plan.

4.24 In the area of horticulture, a major beginning has been made with the National Horticulture Mission (NHM). This is already the largest single scheme of the Union Ministry of Agriculture, with more allocation than for all other crops put together. However, this still largely excludes vegetable production and there is still a shortage of quality planting material. Moreover, horticulture

statistics continue to be very weak so that there is inadequate benchmark to assess either the selections made regarding crop clusters or the Mission's overall impact. Also, although States have welcomed this, their own efforts are still inadequate, for example, on possibilities of converging with other schemes such as integrating with watershed development, using the National Rural Employment Guarantee (NREG) to develop orchards or using the Mid-day Meals scheme to provide a stable local source of demand. There is danger that full opportunities of horticulture may be missed if horticulture has less than full co-operation from other relevant departments. It should be noted that 11th plan projections assume that horticulture will benefit and be benefited by the many backward and forward linkages that it could provide.

4.25 The most important determinants to establish the required linkages are in the area of agricultural marketing and processing. Since high value agriculture is based on perishable commodities, large investments are required in modern methods of grading, post-harvest management and development of cold chains. Such investment in turn requires that new players, including large corporate players, be able to enter existing markets and set up new marketing channels. The NHM therefore incentivises the on-going marketing reforms based on amending existing Agricultural Product Marketing Committee (APMC) Acts to allow this. This process has started in earnest, with many business houses investing in the area and with most States having already made APMC amendments. However, this must be taken to its logical conclusion. **Many States that have made APMC amendments are yet to frame the necessary rules. This uncertainty needs to be removed as soon as possible.** Most States have also endorsed, and many have encouraged, Contract Farming. This needs to be backed by ensuring effective mechanisms for contract registration and dispute resolution, along with adequate information and support so that small farmers are able to enter into collective contracts.

Equity Issues

4.26 Manage vulnerabilities and demographic change: All precaution must be taken to ensure that the poor do not get further excluded as a result of contingencies, whether natural or a part of the economic growth strategy. In particular, there should no fear that they will lose their lands involuntarily to larger entities:

- Survey/settlement should be completed and land titles and their mutations issued and recorded properly. If this is done, modern IT/GIS technologies could be used to build an on-line registry of farmers and their land status. This would not only bring confidence but also enable better credit linkage and eventually allow subsidies to be passed on to farmers directly.

- There is no justification, at this stage, for encouraging corporate farming by relaxing the existing ceiling on land ownership. In fact, if the registry above is done properly, some ceiling-surplus land will be available for distribution. In any case, since many richer farmers are exiting agriculture voluntarily, small farmers should be assisted to buy land through the provision of institutional credit on long-term basis at a low rate of interest.
- At the same time, the land-lease market should be liberalised. The two major elements of such reform are: security of tenure for the tenants during the period of contract; and the right of the land-owner to resume land after the period of contract is over.
- Special programmes need to be designed and implemented to enable small farmers to improve their capacity to go for high value commercial activities in crop production, dairy, poultry, fisheries etc.

4.27 Gender Equity: With the share of female work-force in agriculture increasing, and increased incidence of female-headed households, there is an urgent need to ensure women's rights to land and infrastructure support:

- Women's names should be recorded as cultivators in revenue records on family farms where women operate the land having ownership in the name of male members.
- The gender bias in functioning of institutions for information, extension, credit, inputs and marketing should be corrected by gender-sensitising the existing infrastructure providers.
- Women's cooperatives and other forms of group effort should be promoted for the dissemination of agricultural technology and other inputs, as well as for marketing of produce.

4.28 Regional Balance: A problem, not peculiar to agriculture, is that poorer States that have poor infrastructure not only miss out on private investment but also cannot avail many Central government programmes. The Bharat Nirman initiative is attempting to rectify some of this as far rural areas are concerned but two sources of bias in agriculture against poorer States need to be corrected:

- The Rural Infrastructure Development Fund (RIDF) recycles to States for infrastructure creation Banks' shortfall in agricultural lending from priority lending norms. This should ideally go to those States and benefit those who have least access to credit. In fact, most RIDF funds go to States where rural credit-deposit ratios are relatively high. This should be corrected, along with RIDF allocations changed from being year-to-year to a longer allocation so that this can be built properly into State and District plans.
- Regions with poor market infrastructure are usually excluded from MSP operations by Central agencies. Since this leads to a double disadvantage for farmers in such regions, some arrangement needs to be made, e.g. a revolving price stabilisation fund, so that short-term credit from this can be

easily availed by PRI institutions to do their own MSP purchase which can then be delivered to the Central agencies involved.

Projections of 11th Plan Outlays

4.29 Approximate financial requirements/allocations for the agricultural sector (excluding irrigation) emerging from initial discussion with Central Ministries and States thus far are:

	<u>10th Plan(outlay)</u>	<u>10th Plan Exp</u>	<u>11th Plan (in Rs. Crores)</u>
Centre	21,068	24,867	93,000
States	37,865	31,240	50,000
Total	58,933	56,107	143,000

While the increase in overall total is not unreasonable, the proposals imply a reduction in States' share and increased dependence on the Centre. This implies that the share of agriculture in the annual plan outlays of States, which had already declined from 5.2% in 2002-03 to 4.7% in 2006-07, would fall further to about 3.5% during the 11th Plan. On the other hand, the share of agriculture in the Centre's Gross Budgetary Support to the Plan, which increased from 2.5% in 2002-03 to 3.8% in 2006-07 would need to rise to over 6% in the 11th plan. This is not a desirable pattern of expenditures for a sector which is in States' domain, and nor is it likely that the Centre would be able to fund such a large increase in agriculture's share given the competing demands especially from the social sectors.

Another major problem is that the entire thrust as appears from initial discussions is business as usual, with inadequate attention to longer-term natural resource issues. The NRM component is negligible in both Centre and State proposals. To upscale this activity the projected 11th Plan requirement for irrigation and NRM will be about Rs.250,000 crores. This should also be possible if the combined allocation on these grows 12% annually from 2006-07 onwards. But, as mentioned earlier, it is mainly the States that would have to shift their own spending gradually from irrigation to NRM.

Restructuring Agriculture Planning

4.30 The above highlights a fundamental problem in the nature of agricultural planning currently. Ideally, every district should draw up a District plan that fully utilises an initial resource envelope available from all existing schemes, State or Central, including resources at district level from Central schemes such as those of Rural Development. The District agricultural plan should include livestock and fishing and be integrated with minor irrigation projects, Rural

Development works and with other schemes for water harvesting and conservation. The State agricultural plan should be based on these initial District plans, subject to reasonable resources from its own Plan and adding those available from the Centre, aimed at achieving the State's agricultural growth objective, keeping in view the sustainable management of natural resources and technological possibilities in each agro-climatic region. This plan should then determine each District's final resource envelope, their production plan and the associated input plan. Annual targets at the start of the fiscal year should be fixed and funds for relevant schemes ensured, with implementation reviewed every quarter both at District and State level.

4.31 Unfortunately, State agricultural plans today are far from this ideal. In many cases there are only little more than the States' share of CSS whose guidelines are Centrally determined and whose release is a often a problem. Moreover, since Central funds flow through different channels and to different levels, District plans are no more than a collection of proposals to different Central departments and since each Central department clears proposals on its own priorities, the resulting State and District plans lose the application of minds which can come up with better region-specific solutions. Things are of course somewhat better where the State plan component of total plan expenditure on agriculture is high, but this is getting rare.

4.32 There is therefore a need to both ensure that adequate resources are available for agriculture from both Centre and State and that this be known adequately in advance for meaningful planning at District and State levels. It is suggested that the present format of the Macro-Management scheme of the Union Department of Agriculture and Co-operation be expanded to include not only all Extension and NRM schemes including micro-irrigation, but that it also include suitable schemes of the Department of Animal Husbandry and Fisheries. In addition the Planning Commission in consultation with the Ministry of Agriculture will outline a new ACA mechanism which will provide additional resources to support the extra resource needs of state agricultural plans evolved in the manner described above. It will be available to States that at least maintain their baseline share of agriculture in their own total State Plan expenditure. This ACA would match up to a certain maximum whatever the State spends on agriculture in excess of its baseline share in its total Plan.

4.33 In this format, the Work Plans of existing schemes of Macro-Management and Extension (including district level SREPs) along with the State plan can be basis for early discussion between the State, the Ministry of Agriculture and the Planning Commission so that resource envelopes can accordingly be communicated to Districts. It would allow much more integration especially with NRM, on which the NRAA could advise, and also provide incentives for States to maintain the share of agriculture in their own

Plans. If this works, the Centre can also decentralise administration of its CSS through empowered **Regional Production Commissioners** acting alongside ICAR regional co-ordinators so that the Central role in both research and development becomes more consistent with the Agro-economic requirements.

4.34 To summarise, achievement of the target of 4% growth is technically feasible but requires concerted action on several fronts with the states taking responsibility for holistic planning of agriculture based on a farming system centred on the prevailing agro-climatic conditions. The Centre also has a major role to play in providing additional resources in critical areas and incentivising and supporting the efforts of the states.