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Presidential Address

Food Security and Indian Agriculture: Policies, Production Performance and Marketing Environment*§

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1. Introduction

Ever since independence in 1947, agricultural development policies in India have aimed at reducing hunger, food insecurity, malnutrition and poverty at a rapid rate. Keeping this overarching goal in mind, the emphasis, which was initially (for 15 years or so) on keeping food prices low, shifted to macro food-security and subsequently to household and individual food-security. Later, the food security of vulnerables, sustainable use of natural resources, and equity between rural and urban or farm and non-farm population became the issues of dominant discourse related to agricultural development. The policies and programmes related to marketing and trade were obviously guided by the overall objective sought to be achieved from the agricultural development strategy. The changes in marketing environment and production performance of the Indian agricultural sector should, therefore, be viewed in the context of weightage attached to these objectives at different points of time.

India's agricultural development strategy and approach to food security has yet again proved its resilience in the wake of recent global food crisis, which has created political and social unrest in several countries of developing world. It earlier helped India tide over the severe food crisis of mid-1960s within a period of one and half decades, and also proved its appropriateness in the wake of

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economic liberalization and globalization since the early-1990s. Though, India's performance in terms of reducing hunger and malnutrition has not been as remarkable as that of China and some East Asian countries, given the political and initial socio-cultural milieu, the achievements have certainly been commendable. India's experience has provided several lessons for the countries that are struggling to come out of the poverty-malnutrition-hunger trap. In this paper, a brief review of global scenario of hunger and food prices has been presented in section 2. India's approach and status of food security have been outlined in section 3. Some details of policy instruments and programmes impacting on marketing and production environment for farmers have been discussed in section 4. Current agricultural scenario, emerging concerns relating to production performance and new policy initiatives and programmes launched to revive the agricultural sector have been highlighted section 5. Some specific suggestions emerging from the analysis of the current scenario are given in the last concluding section.

2. Global Scenario of Hunger and Food Prices

India, with a population of 1.11 billion, accounts for 17 per cent of world's population. Its size, in

terms of consumers, is many-times larger than the average size of rest of the countries, except China. The state of food insecurity and hunger in India is of considerable significance for the global situation and, therefore, figures prominently in such discussions at the world fora.

For the world community, hunger and food insecurity has been one of the highest priority issues ever since the World Food Summit (WFS) of 1996 had set a target of reducing the number of hungry and food insecure to half (842 million in the base period of 1990-92) by 2015. Later, the UN Millennium Declaration of 2000 set eight Millennium Development Goals (MDGs), the first of which was to reduce the proportion of hungry (from a base level of around 20 per cent) to half by 2015. Other seven MDGs were also closely linked to the first goal of reducing hunger (reducing malnutrition, IMR and MMR; increasing school enrolment; improving gender equality; increasing access to safe drinking water and sanitation; and combating HIV/AIDS, malaria and other diseases) (FAO, 2005). Obviously, the MDG was milder than WFS target.

FAO's assessment for the period 2003-05 shows that the number of people suffering from chronic hunger worldwide has increased to 848 million, representing an increase of six million over the base period estimates. However, the proportion of hungry people (MDG) during 2003-05 came down to around 16 per cent. During this period, in Sub-Saharan Africa (SSA), the number of hungry people went up from 169 million to 212 million, but the proportion dropped from 34 per cent to 30 per cent.

The rise in food prices since the end of 2006 aggravated the situation of hunger worldwide. The number of hungry in 2007 went up to 923 million (75 million plus over 2003-05 figure) and is likely to have increased further currently as the food price rise was much steeper in the early-2008. The proportion of hungry people is reported to have also increased to 17 per cent in 2007. Thus, meeting the internationally agreed hunger-reduction goals in the few years remaining to 2015 is becoming an enormous challenge.

At the regional level, the largest increases in the number of hungry people, as a result of rising food

prices have taken place in Asia and Sub-Saharan Africa (SSA). The two regions combined already accounted for 750 million, or 89 per cent, of the hungry people in the world in 2003-05. The rising food prices have driven an additional 41 million in Asia and 24 million in SSA below the hunger threshold. In other regions also, although the numbers are smaller, the hunger has increased due to rising food prices. Even in Latin America, which has shown a decade of steady progress towards the WFS target, there has been a sharp reversal of trend since 2006 (FAO, 2008).

Driving forces behind soaring food prices are many and complex, with both supply-side and demand-side factors playing a part. Long-term structural trends and underlying growth in demand for food have coincided with short-term cyclical or temporary factors affecting food supply. On the supply side, while cereals stocks were at the lowest levels in three decades, as a result of unfavourable weather, cereals production fell by 3.6 per cent in 2005 and 6.9 per cent in 2006, before recovering slightly in 2007. Further, the rapid rise in petroleum prices exerted an upward pressure on food prices as fertilizer prices nearly tripled and transport costs doubled during 2006-08. On the demand side, increasing use of sugar, maize, cassava, oilseeds and palm oil by the emerging biofuels industry has been the leading factor behind the increase in their prices. About 100 Mt of cereals (4.7 per cent of global production) were used in the production of biofuels in 2007-08. These apart, adoption of export restrictions by some countries, speculative restocking or pre-stocking by large importers, entry of new types of investors in derivatives markets based on agricultural commodities, and increased speculative activities have been the factors that exacerbated the rise in food prices globally. It is being predicted that while global rise in food prices may abate slightly, these may not come down to the levels of 2004. It is in this context that India's situation of food security and policy response to the global challenges assumes added importance.

In some international quarters, one of the major factors pointed out for rise in global food prices was increase in demand by the middle class in India (and also China), leading to food shortages. India's dietary

pattern atleast cannot substantiate this argument. During 2004-06, the average per capita consumption of cereals in India was 175 kg per year as against 953 kg in USA, 288 kg in China, and 316 kg in the world as a whole. Simplistic calculation would show that if the world adopts India's dietary pattern, only 56 per cent of the existing global cereals output is enough to feed the world.

3. India's Food Security: Approach and Status

3.1. Approach to Food Security

Food security, at both the national and household levels, has been the focus of agricultural development strategy in India ever since mid-1960s when import dependence for cereals had gone up to 16 per cent and the country faced severe droughts continuously for two years. The new strategy launched at that point of time was aimed at 'maximizing the production of cereals', and involved building a solid foundation of food security on three key elements, viz. (a) provision of an improved technology package to the farmers; (b) delivery of modern farm inputs, technical know-how and institutional credit to the farmers; and (c) assurance of a remunerative marketing and pricing environment for farmers. For achieving these objectives, several policy instruments were used that influenced production potential, and marketing system of agricultural commodities in general and food products in particular. Some of the main policy instruments that reflect the policy package adopted by India are as follows:

- (i) Creation, strengthening and expansion of the national agricultural research system (NARS) for developing and perfecting new production technologies for foodgrains and other agricultural commodities.
- (ii) Establishment, strengthening and expansion of agricultural education and training system for agricultural extension workers and farmers for transfer of new technologies at the farm level.
- (iii) An arrangement for the production and/or import and distribution of high-yielding farm inputs like improved seeds, fertilizers, agro-

chemicals and improved implements/farm machines to the farmers.

- (iv) Planning and execution of major, medium, and micro irrigation schemes for increasing the area under irrigation.
- (v) Nationalization of commercial banks, creation of cooperative credit institutions, and reorientation of monetary policy to increase institutional credit flow to the farmers.
- (vi) Creation and expansion of physical and institutional infrastructure (primary market yards, roads, storage facilities, farmers' cooperatives and public sector organizations) for improvement of the marketing system to handle and distribute the emerging marketed surplus.
- (vii) Regulation of traders' exploitative marketing practices through a series of legal and regulatory measures such as licensing, levies, stocking limits and movement restrictions.
- (viii) Fixation of minimum support prices (MSPs) and arrangements for price support purchases and procurement by public or cooperative agencies.
- (ix) Building-up and maintenance of buffer stocks of cereals and distribution of cereals through public distribution system (PDS).
- (x) Provision of food and input subsidies, explicit or implicit, for reconciling the conflicting objectives of cereal producers and consumers in terms of prices.
- (xi) Canalization, licensing, minimum export prices (MEPs), and custom duties for maintaining price stability in the domestic market.

3.2. Dimensions of Food Security

Food security is achieved when 'all people at all times have physical and economic access to food that is sufficient to meet dietary needs for a healthy and productive life'. In this sense, achievement of food security implies producing (or importing) sufficient food and making it accessible to all individuals throughout the year and on a sustainable basis from year to year. Further, fulfilling dietary

needs for a productive and healthy life implies physical and economic access of all people to nutritive food, according to each individual's requirement. Food security thus connotes freedom from hunger and malnutrition.

The status of food security of a country needs to be assessed at three levels. First is the availability of food at national level on sustainable basis, which depends on level and growth of food production, or adequate capacity to import food (if availability elsewhere is assured). Second is the physical and economic access of all households to food. Physical access requires efficient marketing, transport, and storage system to carry the food within an easy reach or at a reasonable distance from human settlements (villages). Economic access of every household to food depends on its purchasing power and prices of food at which it is available. And third is the utilization of available food by individuals, which depends on intra-family allocation of food, and maintenance of reasonable level of health of all individuals to consume and absorb required level of food. Social factors like education, primary healthcare, gender bias, and role of women in household decisions affect food security at the individual level.

It is in this context that India tackled the hunger and food-insecurity situation through both long-term and short-term measures. As a part of long-term strategy, it adopted a development strategy encompassing maintenance of adequate growth of

national food production, and employment and incomes of masses, improvement in marketing infrastructure and access to education and primary healthcare. These apart, the short-term strategy involved selective market intervention and targeted distribution of subsidized food to reduce hunger and food insecurity. Further, as the nutritional status is also influenced by non-food factors such as clean water and sanitation, it was recognised that attention to these aspects will help translate food security into good nutrition.

3.3. Macro Food Security

- (i) The most notable change has been in the increase in national production of staple food, i.e. cereals. The production of cereals went up from 44 Mt in triennium ending (TE) 1951-52 to 203 Mt during TE 2007-08. The average incremental production was around 4 Mt per year continuously for two decades from TE 1974-75 to TE 1994-95 (Table 1). The rate of increase came down during the later decade but has picked up again during the recent three years.
- (ii) The growth rate of cereal production has kept pace with the growth of population and cereals demand. The production of cereals as a group increased at the annual compound rate of more than 3 per cent per annum up to 1991 and around 2.4 per cent up to the mid-1990s. However, as mentioned earlier, the situation was not

Table 1. Production of cereals in India

Period	Rice	Wheat	Other cereals	Total	Increase per year
TE 1951-52	21.8	6.3	16.1	44.2	-
TE 1964-65	36.5	11.0	24.6	72.1	2.15
TE 1974-75	41.0	23.5	26.0	90.5	1.84
TE 1984-95	55.2	44.1	30.9	130.2	3.97
TE 1994-95	78.1	60.8	32.6	171.5	4.13
TE 2004-05	81.2	68.8	32.4	182.4	1.09
2004-05	83.1	68.6	33.5	185.2	-
TE 2007-08	93.4	73.7	35.9	203.0	6.87
2007-08	95.7	76.8	39.7	212.2	8.93

Source: Government of India (2007)

Table 2. India's imports and exports of cereals
(million tonnes per year)

Period	Imports	Exports	Net export
1980-81 to 1984-85	1.58	0.54	(-) 1.04
1985-86 to 1989-90	0.70	0.48	(-) 0.22
1990-91 to 1994-95	0.39	0.92	(+) 0.53
1995-96 to 1999-00	1.10	3.72	(+) 2.62
2000-01 to 2004-05	0.01	6.44	(+) 6.43
2005-06 to 2007-08	2.66	3.72	(+) 2.06

Source: Acharya (2007), updated from GoI (2007-08) and GoI (2007)

comfortable during the period TE 1994-95 to TE 2004-05, when the growth rate dipped to less than one per cent per annum.

- (iii) With the increase in domestic production of staple food, the dependence on imports was almost eliminated. Net imports as a percentage of domestic output had increased to unprecedented levels during the mid-1960s. For example, in 1966, the net import of cereals (mainly wheat) at 10.3 Mt represented 19 per cent of the net domestic production of cereals. On quinquennial basis, the net cereal imports as a percentage of net domestic production declined from 9.6 per cent during 1966-70 to 4.1 per cent during 1971-75, 1.5 per cent during 1981-85 and 0.7 per cent during 1986-90, mainly owing to export of basmati rice and lower imports of wheat. Since then, India has emerged as the net exporter of cereals, mainly owing to the exports of rice, both basmati and non-basmati. India's net exports of cereals were 0.53 Mt/year during 1990-95, 2.62 Mt/year during 1995-00 and 6.43 Mt/year during 2000-05 (Table 2).
- (iv) In addition to the increase in domestic cereal production, the inter-year instability in production was reduced considerably. This happened for two reasons. First, the irrigated area under cereals expanded considerably, reducing the dependency on uncertain rainfalls. Out of the total cereal area, irrigated area increased from 23.1 per cent in 1964-65 to 50.6 per cent by 2004-05. And second, the share of more stable grains (wheat) increased while that of unstable grains (coarse cereals) decreased. Wheat, which

had accounted for 15.2 per cent of total cereals in TE 1964-65, increased its share to 36.3 per cent in TE 2007-08. On the other hand, the share of coarse cereals declined from 34.1 per cent to 17.7 per cent during this period.

- (v) Another noteworthy feature of India's advancements in macro food-security is that 96.5 per cent of the incremental output of cereals between TE 1964-65 and TE 2006-07 was due to improvements in the per hectare productivity (yield); and area expansion, accounting for only 3.5 per cent. For example, during this period, the area under cereals increased from 93.7 Mha to 99.0 Mha and the average yield went up from 770 kg/ha during TE 1964-65 to 1962 kg/ha during TE 2006-07. The improvement in yield resulted from advancements in technology, irrigation, and the diversion of low-yielding crops to high-value produce.

3.4. Household and Individual Food-Security

- (i) There has been a considerable improvement in physical access of households to food in different parts of the country, which was contributed by several factors. First, the share of rice, which is more geographically dispersed, in total staple food, continues to be quite high at around 45 per cent. Second, the expansion of network of public distribution system helped in reaching cereals to deficit and geographically difficult regions (hilly and desert areas). And third, expansion of road networks, creation of primary market yards, and building-up of storage facilities in the rural areas increased physical access of rural households to food even in otherwise deficit areas.
- (ii) Yet, another important development has been the continuous improvement in the economic access of consumers to food. The increase in retail prices of two staple food items (rice and wheat) has been lower than the increase in per capita income, and thus the proportion of consumer income required to buy a unit quantity of rice or wheat has continued to decline. For example, the price of 100 kg wheat as a proportion of annual per capita income in rural areas declined from 15.4 per cent in 1973-74 to

8.7 per cent in 1983-84, 5.9 per cent in 1990-01, 5.0 per cent in 1994-95, 4.4 per cent in 1999-2000 and 4.0 per cent in January 2008. A similar declining trend has been noticed for urban communities, as well as in the case of rice for both rural and urban areas.

- (iii) Improved availability of staple food at the declining real prices has contributed to improved nutritional-security. Farmers have shifted from the low-yielding coarse cereals to non-cereal food products since the middle of 1980s, a fact which has *inter alia* helped to increase production and availability of sugar, fruits, vegetables, spices, milk, eggs, meat and fish/fish products. As the production growth of all these food items was considerably higher than the population growth, per capita production of nutritive foods went up substantially. India now produces 58 Mt fruits, 112 Mt vegetables, 102 Mt milk, 46 billion eggs and 7 Mt fish.
- (iv) Despite expansion in the availability of cereals and decline in their relative prices vis-à-vis incomes, the per capita consumption of cereals has also tended to drop in recent years (Dev, 2003). The decline in consumption has been sharper in coarse cereals, and has occurred even among the lowest 30 per cent of consumers, reflecting a shift towards more nutritive foods like fruits, vegetables and livestock products. Long-term data from National Sample Survey Organization (NSSO) has also indicated a declining trend in the per capita consumption of cereals in both rural and urban areas, accompanied by a decrease in the proportion of expenditure on cereals and an increase in that on milk, meat, eggs, fruits and vegetables. This shows improvement in the nutritional levels.
- (v) There has been considerable reduction in hunger or non-availability of food at the household level. As per large sample surveys of NSSO, the percentage of households not getting enough food daily even in some months declined from 16.2 per cent in 1983 to 4.2 per cent in 1993-94, to 2.6 per cent in 1999-00 and to 1.9 per cent only in 2004-05. During 2004-05, only 0.3

per cent households reported inadequate food in all the months of a year.

- (vi) Economic poverty is an important factor affecting food security at the household level. Over the years, the incidence of poverty, in both rural and urban areas, has declined considerably. The percentage of population below poverty line declined from 51 per cent in 1977-78 to 39 per cent in 1987-88, to 26 per cent in 1999-00 and further to 22 per cent in 2004-05.

3.5. Long Way to Go

- (i) Though over the years, the country has been able to reduce hunger, 0.3 per cent households still report inadequate availability of food. This implies a population of 3.3 million.
- (ii) Though, economic poverty has been reduced to 22 per cent of the population, it implies that 230 million persons are still poor in India.
- (iii) Though the proportion of under-nourished population has come down to 20 per cent, nutritional status of children and women continues to be a cause of concern. Nearly 48 per cent of the under-3 children suffer from malnutrition and 39 per cent of the women suffer from energy deficiency, leading to both high infant and maternal mortality rates.

3.6. Food for Work, Employment Guarantee and Right to Food

Apart from direct food assistance programmes, increasing the purchasing power of rural households was attempted through food for work and rural wage employment programmes. The Food for Work Programme was started in 1977-78. Since then, there have been several modifications of rural wage employment programmes, with foodgrain component built into these as a part of wages. In September 2001, different programmes were merged into an umbrella programme called SGRY (*Sampoorna Gramin Rozgar Yojana* – Comprehensive Rural Employment Scheme). Under SGRY, the works taken up were labour-intensive, wages were equal to statutorily prescribed minimum wages by provincial (state) governments, and wages were paid in the form of 5 kg of foodgrains (at subsidized prices) plus cash.

In February 2006, a National Rural Employment Guarantee (NREG) scheme was launched in 200 most backward rural districts under NREG Act passed by the Parliament. Under the NREG Scheme, at least one member of a rural family is guaranteed employment for 100 days in a year. In case, the local agency fails to provide employment within 15 days of application, he/she becomes entitled for cash compensation. The scheme was extended to 300 districts in 2007 and since April 2008, it has been extended to the entire country (588 rural districts). The SGRY has been subsumed in NREGS from April 2008.

A development, which points to the need for better implementation of food assistance and employment schemes is related to 'right to food' and 'right to information' campaigns in the country. These campaigns were started in 2001 and got momentum subsequently. Grassroots Civil Society Organizations became active in the implementation of public distribution system and wage employment programmes. Even the Supreme Court of India intervened in the matter of effective implementation of PDS and wage-employment schemes. As a consequence, the demand or off-take of foodgrains from PDS outlet was increased and became almost equal to the entitled quota. However, due to shortfall in production, relatively low support prices, and big/corporate traders being active in the market, the government could not procure sufficient quantities of rice and wheat to meet the PDS commitment. Consequently, it had to import 5.5 Mt of wheat at a price higher by 100 per cent or more than the support price in 2005-06. There was lot of resentment among farmers and criticism of government policy on this count.

4. Current Marketing and Trade Environment

Agricultural marketing system and trade policy affect the prices received by the farmers and, in turn, influence the profitability of agriculture. Profitability of farming is the sum total of profitability of individual farm enterprises that include crops, horticultural enterprises, livestock and fisheries. For each enterprise, the profitability is the net outcome of physical input-output ratio (or total factor

productivity) and relative prices of inputs and outputs. Physical input-output ratio depends on the state of technology available and adopted by the farmers (varieties, quality of seeds or planting material or feeds, dosages of inputs, and agronomic and protection practices) and weather conditions. The relative prices of inputs and output are determined by the market structure and efficiency of the marketing system for essential inputs and output.

4.1. Price Policy and Support for Farmers

Price support for farmers has been an important instrument of agricultural development and food policy since the mid-1960s. The main objectives of price policy are: (a) to provide incentives to farmers for adopting new technology and maximizing production, (b) to safeguard the interests of consumers or users of farm products by maintaining market prices at reasonable levels, and (c) to keep the fluctuations in prices within certain limits. The main instruments of price policy, *inter alia* are minimum support prices, buffer stocking, and operation of a public distribution system of cereals. The main challenge of the policy has always been to reconcile the conflicting price interests of farmers and consumers. It is partly achieved through the provision of food subsidy and supply of essential farm inputs (fertilizers, electricity and canal water) to farmers at reasonable prices or user charges. Currently, minimum support prices (MSPs) are announced for 25 farm products, that include cereals, pulses, oilseeds, raw cotton, raw jute, sugarcane and copra (dried coconut). Buffer stocking and public distribution system are operated for rice, wheat and to some extent for sugar. Commission for Agricultural Costs and Prices (CACP) is the advisory body of Government of India in all matters relating to agricultural price policy. The quantities that the government agencies need to purchase at support prices depend on the behaviour of market prices and private trade, and fluctuate from year to year. For example, price support purchases of rice and wheat accounted for 15.8 per cent of the production during TE 1992-93, 24.6 per cent during TE 2002-03 and 22.7 per cent during TE 2006-07. In terms of absolute quantities, these varied between 20 Mt and 39 Mt at

these points of time. About 25 per cent is retained by the producer farmers for self-consumption and rest, i.e. more than half of the production is handled by private trade.

Several committees in recent years have reviewed the current price policy regime. These include Long-Term Grain Policy Committee (Abhijit Sen); Repositioning of CACP Committee (Y.K. Alagh); Planning Commission's Working Group for XI Five-Year Plan (S.S. Acharya); Foodgrain Policy Review Committee (Ramesh Chand); and National Commission for Farmers (M.S. Swaminathan). Some of the important suggestions of these committees are:

- (i) Continuation of the policy of maintaining self-sufficiency in cereals.
- (ii) Continuation of the system of minimum support prices and making it effective in all the states/areas of the country.
- (iii) Continuation of the policy of buffer stocking of cereals and their subsidised distribution for maintaining price stability.
- (iv) Retaining Food Corporation of India as the national foodgrain handling agency on behalf of the Government of India.
- (v) Fixing the minimum support prices at a level 50 per cent higher than the cost of production.
- (vi) Dovetailing of domestic price policy with trade policy by renaming the CACP and redefining its terms of reference.
- (vii) Assigning statutory status to CACP.
- (viii) Phasing out of levy on rice millers and sugar factories.
- (ix) Switching over to universal PDS from the present system of targeted public distribution of cereals.

Going by these recommendations, the government is continuing the policy of minimum support prices, buffer stocking of cereals, and distribution of subsidised foodgrains. In addition, the FCI is continuing to perform its critical role of food management on behalf of the government. Implicitly, the need for maintaining a high degree of self-sufficiency in cereals is also recognised. The suggestion to fix MSPs at levels 50 per cent higher

than the cost of production has rightly been not accepted by the government because there are several issues involved in this suggestion. As regards other suggestions, there is perhaps no firm decision on either side.

4.2. Public Distribution System (PDS) of Cereals

Cereals being staple food in India, supply of these at affordable prices has been an essential component of food-security policy. Chronic food-insecurity is being addressed through subsidized food distribution, food for work, and employment generation and guarantee programmes. Transitory food-insecurity is addressed through short-term relief programmes. And nutritional insecurity of women and children is addressed through supplementary nutrition and mid-day meals programme in schools. As per the assessment of World Food Programme (UNWFP, 2002), food assistance programmes in India have moved from 'food for the nation' to 'food for the people' and recently to 'food security for the vulnerable'. For a clear understanding of India's PDS of foodgrains, one needs to look at buffer stocking, provisions of targeted PDS, supplementary nutrition and mid-day meals programme, size of PDS, and food subsidy involved.

4.2.1. Buffer Stocking of Rice and Wheat

Government of India maintains stocks of rice and wheat to meet the requirements of public distribution system and also for open market sales to reduce the fluctuations in prices. The stocks are built up mainly through price support operations. Occasionally, import route is also used to build-up the stocks. The size of minimum normal stocks is determined every five years by an expert group and is guided by the degree of inter-year fluctuations in production and government's commitment for PDS. The actual stocks at a point of time differ from the norms due to a variety of factors.

4.2.2. Distribution of Subsidized Cereals

The distribution of subsidized rice/wheat is supplemental in nature and does not intend to meet the entire requirement of a family. The system is operated under the control of state governments. The foodgrains are distributed to target groups at different

prices through a network of 4,62,000 shops spread throughout the country. The target groups have been issued ration cards for buying subsidized grains. There are four categories of entitled citizens (non-income tax payee) under PDS: (a) 20 million poorest of the poor families are supplied 35 kg of rice/wheat per month at a price of Rs 3/Rs 2 per kg. (b) Remaining 61.6 million poor families (BPL) are supplied 35 kg for rice/wheat per month at half the economic cost of rice and wheat (purchase price plus handling costs). Since July 2002, central issue prices are Rs 5.65/ kg for rice and Rs 4.15/ kg for wheat. (c) The families above poverty line are eligible to receive grains under PDS at a price close to the economic cost. For this group of families, the central issue prices are Rs 8.30/ kg for rice and Rs 6.10/ kg for wheat. (d) In addition, indigent senior citizens without any means of income or family support are provided 10 kg of rice/wheat per month free of cost. About 65000 persons are covered under this scheme.

4.2.3. Supplementary Nutrition Programme (SNP)

The objective of SNP is to alleviate or prevent malnutrition among vulnerable children below 6 years and expectant or nursing mothers. The programme was launched in 1975 and now covers 4.8 million mothers and 22.9 million children through a network of 4200 projects covering 75 per cent of development blocks in the rural areas and 273 slum pockets in the urban areas. According to nutritional needs, hot meals or snacks, along with other items (vitamins and iron tablets, etc.) are provided through childcare (*Anganwadi*) centres established in the locality with a local lady as the in-charge.

4.2.4. Mid-Day Meals (MDM) for School Children

The MDM programme was taken-up as a national programme of nutritional support to children undergoing primary education in 1995. It has twin objectives of improving the nutritional status of primary school children and of increasing enrolment, regular attendance and retention in schools. The foodgrains are supplied by the central government free of cost to the state governments, while the transport and cooking costs are borne by the state governments. Under this programme, three options are available to the states, viz. (a) providing a hot,

cooked meal consisting of 100 gram of rice/wheat per day per child for 200 school days, or (b) distributing pre-cooked ready-to-eat meals, or (c) dispensing 3 kg of rice or wheat per child per month for 10 months. Presently, 120 million children in almost one million schools are covered under this programme (GoI, 2006-07).

4.2.5 Size of PDS

The quantities of subsidized cereals distributed under PDS have increased considerably during the current decade (Table 3). During 1960s and 1970s, the distribution was around 10 Mt of foodgrains per year. It was around 15 Mt per year during 1980s and 1990s. Since 2002, the commitment under PDS has been increasing with annual average distribution going up sharply to around 39 Mt during 2002-05. Out of the total distribution of subsidized foodgrains during the past four years, nearly 82 per cent went to below poverty line families.

4.2.6. Food Subsidy

Food subsidy is the difference between MSP plus handling/distribution expenses incurred by Food Corporation of India (FCI) and the issue prices of foodgrains under PDS. This is the amount disbursed by the government to FCI for its procurement, handling and distribution activities. In India, the food subsidy has served the multiple objectives of minimum guaranteed prices to the farmers, maintenance of buffer stocks, supply of subsidized foodgrains under identified schemes of the

Table 3. India: Distribution of subsidized cereals

(million tonnes)

Year	Rice	Wheat	Others	Total
1965	3.6	5.9	0.6	10.1
1970	3.0	5.4	0.4	8.8
1975	3.2	7.5	0.5	11.2
1980	6.1	8.8	0.1	15.0
1985	7.2	8.5	0.1	15.8
1990	8.7	6.6	0.1	15.4
1995	9.4	5.6	-	15.0
1996-02(6 years)	9.9	6.5	-	16.4
2002-05(3 years)	21.0	18.3	-	39.3

Source: GoI (2007-08)

government, and occasionally open market sales for stabilizing market prices. The magnitude of food subsidies is, therefore, linked to the scale of operations for achieving the above-mentioned national objectives. The food subsidy in India which was 0.43 per cent of GDP (gross domestic product) in 1990-91 (Rs 24.5 billion), and 0.57 per cent (Rs 120.1 billion) of GDP in 2000-01, increased further due to higher commitment of distribution of subsidized foodgrains under different programmes. The food subsidy increased to Rs 241.8 billion, accounting for around 0.99 per cent of GDP during 2002-03 due to severe drought in the country. However, since then, the food subsidy has been relatively contained (Table 4). During 2007-08, the food subsidy, as reflected in the Union Budget, was Rs 254 billion, accounting for 0.62 per cent of GDP.

4.3. Farm Input Subsidies

Supply of key farm-inputs at reasonable prices has been another important instrument of food-security policy in India. The twin and conflicting objectives of assuring remunerative prices to farmers and making available food to the consumers at affordable prices were reconciled *inter alia* by keeping the prices of inputs at reasonable levels. This led to the emergence of input subsidies. Input subsidies in Indian agriculture are of two broad categories, viz. direct or explicit and indirect or implicit. Direct or explicit subsidies are in the nature of payment to the farmers to meet part of the cost of

inputs like seeds, plant protection chemicals, or machines. These are usually made available to specific target groups like marginal or small farmers and account for a small proportion of the total input subsidies. The indirect or implicit subsidies arise on account of the manner of determination of sale prices of inputs. There is no explicit payment of subsidy to the farmers. The inputs are supplied at a price or user charge lower than the cost of production, which amounts to implicit subsidization. Implicit or indirect subsidies on fertilizers, electricity for irrigation and canal water are the major input subsidies in the Indian agriculture. The estimates of input subsidies during the past 13 years, as reported by the Ministry of Agriculture, are shown in Table 5. According to these estimates, the input subsidies to the Indian agriculture increased from Rs 140.7 billion in 1993-94 to Rs 487.9 billion in 2004-05. Out of the total input subsidies, canal irrigation accounts for 27 per cent, fertilizers 32 per cent, electricity 32 per cent and other direct subsidies account for 9 per cent in 2004-05. Across farm-size groups, the share of subsidies follows the share in operated land, with small farmers having relatively larger share. The subsidy per hectare works out to be INR 3000 or US\$ 75. Computation across crops shows that 96 per cent of the input subsidies go to the food crops (Acharya and Jogi, 2007).

4.4 Farm Inputs Delivery

There is a well-defined system for the supply of quality certified seeds to the farmers. While the breeder seed is produced mainly by the ICAR Institutes and SAUs, the production of foundation and certified seeds is done by the private, cooperative as well as government agencies. Over the years, the share of private sector in total seed business has been increasing. The private seed companies accounted for nearly 58 per cent of the total seed produced and supplied to the farmers in 2006-07. During this year, 1.55 Mt of quality seed was supplied to the farmers, whereas it was only 0.58 Mt in 1991-92. The fertilizer-use in terms of nutrients has gone up to 22 Mt, which is 113 kg/ha (2006-07), as against 12.7 Mt (70 kg/ha) in 1991-92. While the use of quality seed and fertilizers is increasing, the use of plant protection chemicals has been going down due to several developments, including use of disease-resistant

Table 4. Food subsidy in India

Year	(Rs in billion)	
	Food subsidy at current prices	Food subsidy as per cent of GDP
1990-91	24.5	0.43
2000-01	120.1	0.57
2001-02	174.9	0.77
2002-03	241.8	0.99
2003-04	251.6	0.91
2004-05	257.5	0.83
2005-06	230.7	0.66
2006-07	238.3	0.63
2007-08	254.2	0.62

Source: GoI (2007-08)

Table 5. India: Input subsidies to agriculture

(Rs in billion)

Year	Fertilizer	Electricity	Irrigation	Others	Total
1993-94	45.6	24.0	58.7	12.4	140.7
1994-95	57.7	23.4	67.7	12.5	161.3
1995-96	67.4	19.8	79.3	10.3	176.8
1996-97	75.8	83.6	92.2	9.0	260.6
1997-98	99.2	49.4	103.2	9.8	261.6
1998-99	115.9	38.2	118.3	11.8	284.2
1999-00	132.4	60.3	112.0	31.2	335.9
2000-01	138.0	60.6	134.6	26.9	360.1
2001-02	126.0	93.4	131.6	30.4	381.4
2002-03	110.2	73.5	150.1	31.3	365.1
2003-04	118.5	NA	111.4	40.2	270.1
2004-05	158.8	154.3	129.6	45.2	487.9

Source: GoI (2006, 2007)

varieties, bio-control practices and integrated pest management techniques. The use of chemical pesticides decreased from 72000 tonnes in 1991-92 to 38000 tonnes in 2006-07. The outlets for supply or sale of these inputs are mainly with farmer's cooperatives and private sector.

These apart, mechanization of farm operations has expanded manifold. For example, the use of irrigation water lifting pumps (both diesel engines and electric motors) went up from 0.1 million in 1951 to 3.2 million in 1972 and 15.7 million in 2003. The number of farm tractors increased from 0.15 million in 1972 to 2.4 million in 2003 and of threshers increased from 0.2 million to 9.1 million during this 30-year period. The electricity use in agriculture increased from 96 billion kWh in 1982-83 to 386 billion kWh in 2004-05, accounting for around 23 per cent of total electricity used in the country. However, the actual use was much lower than the demand. The demand for electricity in agriculture as well as other sectors of the economy is increasing at a very rapid rate.

For facilitating the use of high-yielding inputs, credit delivery system was reorganised and geared towards farmers and rural areas through several monetary policy measures. The credit flow to farmers during 2007-08 was of Rs 1.4 trillion (GoI, 2007-08). In addition, for reducing the production risks of

farmers, the provisions of crop and livestock insurance were rigorously reviewed and made more farmer-friendly. In 2006-07, 18 million farmers were covered under the crop insurance programmes. Now, the scheme of weather-based crop insurance has also been introduced and both public and private sector companies are trying to increase the coverage, to help farmers and cover their weather-induced risks (Chand and Raju, 2008).

4.5. Regulation of Marketing System

As mentioned earlier, regulation of food marketing system has been a part of food policy instruments ever since Independence. Till the middle of 1990s, several regulations were in place at different points of time. Some of these are legal restrictions on activities of traders and processors, including licensing, stocking limits, movement restrictions on foodgrains, levy obligation and size restrictions on grain milling; restrictions on bank credit for traders; ban on futures trading, canalization of imports and exports; and restrictions on setting up of private market yards. During late-1990s and first half of the current decade, several official committees reviewed the marketing situation and came out with recommendations for deregulation and liberalization of domestic markets for food commodities. Consequently, many steps were taken between 2000

and 2003 towards liberalization of foodgrain markets. The situation of domestic market deregulation in 2004 has been as follows:

- Movement restrictions – Lifted
- Storage controls – Lifted
- Small scale reservation – Lifted
- Credit control – Lifted
- Ban on futures trading – Lifted
- Bulk handling and storage (BHS) by private trade – Allowed
- Ban on foreign investment in BHS – Lifted
- Licensing system – Lifted
- Export and import – Liberalized
- Ban on set up of private wholesale markets – Lifted
- Contract farming – Allowed
- Direct purchase from farmers outside market yards – Allowed
- Minimum support prices – Continue
- Levy on rice mills and sugar factories – Continues
- Entry of organized retail trade – Allowed

4.6. Trade Policy Instruments

The import and export policy of foodgrains has been used to maintain domestic supply and price stability at reasonable levels. The policy instruments till mid-1980s included canalization through public agencies, quota restrictions, licensing, minimum export prices (MEP), and devaluation of currency for maintaining balance of payments. Liberalization of general trade policy began in mid-1980s. Since then, trade policy is usually announced on a five-yearly basis, but import duties and other specific instruments are announced yearly or whenever the need arises. Since 1997, MEP has been abolished, stocking limits for exporters have been relaxed, levy on non-basmati rice meant for export was withdrawn and QRs (Quantitative Restrictions) were withdrawn. The export of rice was allowed freely, but recently ban on exports of non-basmati rice and MEP on basmati rice was reimposed, which was in response to sharp rise in their domestic prices.

5. Current Agricultural Scenario

5.1. Growth Performance and Instability

The share of agriculture in GDP of India has registered a steady decline from 36.4 per cent in 1982-83 to 17.8 per cent in 2007-08. Yet, this sector continues to support more than half a billion people providing employment to 52 per cent of the workforce (GoI, 2007-08). The gap between the growth of agricultural and non-agricultural sectors began to widen since 1981-82 and more particularly since mid-1990s, because of acceleration in the growth of industry and service sectors. During 1950s, 1960s and 1970s, the India's economy was growing at the rate of around 3.6 per cent. The economic growth rate accelerated during the 1980s and 1990s to around 5.6 per cent per annum. It further accelerated during the current decade, recording a growth rate of 7.6 per cent during 2002-07 and around 9.2 per cent during the past two years. The growth rate of agricultural sector, which was around 2.5 per cent during the first three decades after Independence, accelerated to 3.6 per cent during 1980s and up to the middle of 1990s. However, since then it has decelerated to less than 2.5 per cent per annum. It has picked up again in the past two years but whether it is being sustained is yet to be seen (Table 6). In 2007-08, it has been 4.5 per cent.

Sector-wise growth rates (Table 7) reveal that livestock and fisheries sectors recorded high growth rates of 3.5 per cent or more per annum, since the

Table 6. Growth rates of Indian economy and agricultural sector

Period	(% per annum)	
	Total economy (GDP)	Agriculture and allied sectors
1951-52 to 1967-68	3.69	2.54
1968-69 to 1980-81	3.52	2.44
1981-82 to 1990-91	5.40	3.52
1991-92 to 1996-97	5.69	3.66
1997-98 to 2001-02	5.52	2.50
2002-03 to 2006-07	7.64	2.29
2005-06 to 2006-07	9.17	4.35

Source: Planning Commission (2007)

Table 7. India: Growth rates of agriculture
(% per annum at constant prices)

Period	Crops	Livestock	Fisheries	All agriculture
1951-68	3.00	1.02	4.68	2.54
1968-81	3.00	3.26	3.08	2.44
1981-91	2.97	4.78	5.74	3.52
1991-97	3.09	4.00	7.05	3.66
1997-02	2.25	3.52	2.62	2.50
2002-07	1.88	3.56	3.40	2.29
2005-07	4.12	4.57	3.76	4.35

Source: Planning Commission (2007)

middle of 1960s. The crop sector's growth rate was around 3 per cent per year till the mid-1990s, after which it decelerated to 1.88 per cent during 2002-07. However, it has picked up in the past three years to more than 4 per cent.

Crop group-wise analysis of growth rates (Table 8) shows that while fruits-vegetables recorded reasonable growth rates, the growth rate of cereal sector started decelerating in 1990s. During 1997 to 2002, it came down to a level of 1.49 per cent, which was marginally lower than the growth of population. This endangered the staple food security. However, the trend has reversed during the past three years, after a series of new initiatives were taken by the government.

Apart from achieving reasonably satisfactory growth rates of production of staple as well as other foods, another important achievement of India's

agriculture is the continuous decline in instability of crop production and yields, which greatly depend on uncertain monsoons. This has happened for foodgrain as well as non-foodgrain crops. The instability index (standard deviation of natural $\log yt + 1/yt$) of production of all crops taken together declined from 8.30 during 1951-65 to 6.95 during 1968-88 and further to 5.05 during 1989-07. For yields, the instability index during these periods declined from 7.93 to 4.97 and further to 4.65 (Chand and Raju, 2008).

5.2. Concerns Relating to Production Performance

The concerns relating to production performance can be looked at from different angles.

The first is the reasons for sharp deceleration in the growth of agricultural sector since the early-1990s. This happened on account of (a) growth rates of net sown area, gross cropped area, and electricity use in agricultural turning negative; (b) deceleration occurring in growth of fertilizer-use in agriculture; (c) growth of terms of trade for agriculture turning negative; and (d) decline in the growth rate of total factor productivity in agriculture. Thus, there was nothing favourable to the agricultural sector during mid-1990s to 2004-05.

The second aspect of the current agricultural crisis is the weakening of macro food (cereals) security during TE 1994-95 to TE 2004-05. It was mainly owing to a sense of complacency in the matter of cereal production that prevailed since mid-1990s.

Table 8. India: Growth rates of crop groups

(% per annum at constant prices)

Period	Cereals	Pulses & oilseeds	Fruits & vegetables	Other crops	All crops
1951-68	4.19	2.98	2.70	2.41	3.00
1968-81	3.43	0.97	4.80	2.98	3.00
1981-91	3.52	5.41	2.84	1.73	2.97
1991-97	2.36	2.92	6.07	2.25	3.09
1997-02	1.49	(-1.43)	3.68	4.14	2.25
2002-07	0.66	3.69	1.19	3.76	1.88
2005-07	3.52	0.47	3.12	6.83	4.12

Source: Planning Commission (2007)

The atmosphere against cereals had its toll in several forms. The growth rate of area under cereals decelerated and even turned negative for rice. The research investment in cereals slowed down. The growth rates of yield and total factor productivity of rice and wheat slowed down. As a consequence, the decline in real cost of production of rice and wheat either slowed down or turned the other way. There was also a set back on the front of cereals trade balance. On quinquennial basis, India could reduce its net import of cereals continuously till the second half of 1980s and later increased its net exports till the middle of current decade, but during 2005-07, our import dependence has again resurfaced.

As regards the wheat imports during 2005-07, two important factors have led to the situation. One, the large traders are now competing with the public agencies for buying wheat and rice during the peak marketing period and there is nothing wrong in it as farmers face a more competitive market situation. And two, the government has now larger commitment of distribution of subsidised foodgrains under various food security and food safety net programmes and, therefore, needs larger public stocks of grains. But, the government's strategy to build up these stocks continues to rely only on price support purchases. The price support operations, by very definition, need not and are not expected to serve the objective of meeting enlarged PDS needs. There is a need for more prudent management of the cereals sector to avoid the criticism, which the government has to face in the wake of imports at very high prices.

The third aspect of the current agricultural crisis relates to declining profitability of agriculture and consequently the loss of farmers' faith in farming activities. A slow-down in the growth of TFP is bound to slow down the rate of decline in cost of production. In the case of rice and wheat, the growth rate of TFP in Punjab and Haryana has turned negative. As a consequence, the cost of production has tended to increase. The terms of trade for agriculture, which is the ratio of prices received by the farmers (for products sold by them) to the prices paid by them (for inputs and consumption goods purchased by them) has turned against the farmers. The average income of Indian farmers vis-à-vis those engaged in

other occupations has continued to be substantially lower and has deteriorated further during the past decade. This is evident from several facts. The growth of agricultural sector has been substantially lower than that of non-farm sector, whereas agricultural sector sustains more than 60 per cent of the population. The incidence of rural poverty is substantially higher in land-owning households than landless households. The production of staple food is turning out to be less profitable relative to other competing enterprises.

For understanding the income levels of farmers vis-a-vis income in other occupations, take the case of Punjab state, which has assured irrigation for atleast two crops a year. The per hectare yields of wheat and rice, which are the major crops of Punjab, are the highest in the country. Both these crops are commercial crops for the Punjab farmers and an effective price support system is in place. The average farm size in Punjab is 3.8 ha, which is 2.5-times the average size of Indian farms. In spite of these favourable factors, an average Punjab farmer (with 3.8 ha land and growing two crops of rice and wheat) is able to earn an income for his labour and management, that is less than the starting salary of a Class IV employee in the government sector. The situation of farmers in the other states can be easily visualized from this fact. The questions that arise are: (a) How can Indian farmers have faith in cereal production?; (b) Why to question the supply of fertilizers at lower prices and electricity and irrigation to farmers at lower user charges?; (c) Why not to substantially enhance the level of minimum support prices for various crops?; and (d) At what level to stabilize the declining trend in real prices of staple foods like rice and wheat?

The perception about the level of staple food prices for consumers has continued to be outdated. Whether the price is higher or not should be seen in relation to the consumers' income. In the early-1970s, the average retail price of one quintal of rice/wheat was equivalent to 16 per cent of the India's average per capita income and one-day's wages of a rural labourer fetched one kg of rice or wheat. The real prices of rice and wheat have continued to decline since then. And this is a welcome development. Today, 100 kg of rice or wheat can be bought by paying only

around 4 or 5 per cent of average per capita income and one-day's rural wage fetches 5 or 6 kg of rice or wheat. However, we should not forget the plight of staple food producers. Undoubtedly, there is a need to pay a higher price to Indian farmers producing staple food for maintaining a high degree of macro food-security of the country. The perception about what is a high price for rice and wheat must change. Apart from the prices of farm products, farmers' profits also depend on availability of new technology, trade policy of the government, freedom to lease-in or lease-out land without fear of losing ownership rights and supplementing income from non-farm occupations, either within the rural areas or in nearby larger settlements where investment is growing fast. Several steps are necessary pertaining to these aspects for improving farm household incomes.

The fourth aspect of current agricultural crisis pertains to the unfinished agenda of the marketing system improvement. The main objective of the marketing system improvement is to enhance its efficiency by saving Rs 50000 crore to Rs 80000 crore that are annually lost and is an avoidable national wastage. These are not intended, as commonly understood, to eliminate market functionaries but to link farm-gate to the retailer or consumers through efficient supply chain management. Saving of huge avoidable losses would provide higher price to farmers, lower price to consumers and create new employment opportunities along the supply chain. Agricultural marketing system improvement, through encouraging technologically superior supply chains, is a win-win situation for all stakeholders. Recent steps taken by the government in this regard is a welcome development, but considerably more steps are necessary to speed up the process of agricultural market reforms. An amendment in State APMR Acts is yet to be adopted by all the states. Wherever Act has been passed, rules for its implementation have not been adopted. The notion of one national market for farm products is yet to be grounded. The infrastructure in the existing market yards continues to be inadequate. Adhocism in marketing policies and reimposition of marketing regulations continue to keep the investors away from the marketing investments. The role and attitudes of APMCs and State Marketing

Board have not changed substantially. Market fees are not fully ploughed back. Contract farming and direct purchases from the farmers continue to be on a limited scale. The progress towards organising farmers into marketing groups continues to be inadequate. The import policy for agricultural products (edible oils, pulses and recently wheat) is mainly oriented towards consumers, without caring for the farmers who produce these products.

Fifth several areas in the country, particularly intensive farming areas are now suffering from soil and land degradation, depletion of groundwater, and micronutrient deficiency.

Sixth is the considerable increase in the imports of edible oils and pulses since mid-1990s. The import of edible oils, which accounted for around 13 per cent (1.2 Mt) of total consumption in 1995-96, has sharply increased to 37.5 per cent (4.7 Mt) during 2006-07. The imports help in keeping consumer prices low, but adversely affect the producer-farmers, who are mostly resource-poor and operate in drylands or rainfed areas. While the net social gain from imports is insignificant, there is considerable redistribution of income from dryland resource-poor farmers to consumers.

5.3. New Policy Initiatives and Programmes

Several new initiatives have been taken during the past few years to tackle the situation and bring back farmers' confidence in farming in general and cereals production in particular.

- (i) A National Food Security Mission (NFSM) was launched with the specific objective of increasing the production of rice, wheat and pulses in targeted 305 districts, with an outlay of Rs 48.8 billion during the five-year period. The focus is on providing quality seeds of high-yielding varieties and all possible efforts to transfer improved technology to farmers, with enough flexibility to choose the interventions at district level (GoI, 2007-08).
- (ii) *Rashtriya Krishi Vikas Yojana* (RKVY) (National Agricultural Development Scheme) is another new scheme, which aims at incentivising the state governments to increase

the share of investment in agriculture in their state plans. The states have been given complete flexibility to plan on the basis of agro-climatic conditions of each region. The allocation under RKVY is of Rs 250 billion for a period of five years (GoI, 2007-08).

- (iii) The Government of India has approved and adopted a National Policy for Farmers in 2007. It covers several areas but focuses on the economic well-being of farmers. It includes asset reforms, use of biotechnology and ICT, bio-security system, seed and soil health, credit, insurance, higher support prices for farmers, and enlargement of food-security basket.
- (iv) Under the farm credit package, the flow of institutional credit to the farmers was doubled within two years (2005-06 to 2006-07). More than 72 million farmers have been issued credit cards by commercial and cooperative banks.
- (v) The crop, weather and livestock insurance schemes for farmers have been redesigned and coverage has been expanded.
- (vi) All the rural districts have been equipped with a 'Farm Science Centre', for increasing the reach of farmers to new technologies and agricultural scientists. These centres are a part of either national agricultural research institutes or state agricultural universities.
- (vii) The investment in agricultural research has been increased considerably. Similarly, the allocation for Horticultural Mission and several other agricultural development schemes has been enhanced.
- (viii) Recently, outstanding loans of farmers (from commercial and cooperative banks) amounting to Rs 710 billion have been waived by the government to provide relief to 40 million farmers and to make these farmers eligible for fresh loans.
- (ix) In addition, the support prices for rice and wheat have been substantially hiked during the current season.

These apart, following new initiatives and expansion programmes are at different stages of implementation (GoI, 2007):

- (i) Bharat Nirman (India connectivity and infrastructure programme)
- (ii) Watershed Development and Micro Irrigation Programme
- (iii) Establishment of National Rainfed Area Authority
- (iv) Establishment of National Fisheries Development Board
- (v) Establishment of National Bee Board
- (vi) Revitalization of Cooperative Sector
- (vii) Enactment of Integrated Food Law and setting up of Food Safety and Standards Authority of India (FSSA)
- (viii) Agri-business Development through Venture Capital Participation Schemes
- (ix) Legislative Framework for Warehousing Development and Regulation
- (x) Protection of Plant Varieties Regulation and Farmers' Rights Act
- (xi) Establishment of Bamboo Mission
- (xii) Increasing Knowledge Connectivity through Common Service Centres and IT Initiatives
- (xiii) National Rural Health Mission

The outcome of these medium- and short-term measures has been positive. With favourable behaviour of monsoon, the production of cereals increased from 185.2 Mt during 2004-05 to 212.2 Mt during 2007-08. The procurement of wheat and rice increased considerably during the current year. Wheat procurement has been more than 23 Mt and of rice around 27 Mt, which is more than sufficient to meet the requirements of PDS.

6. Conclusions and Suggestions

6.1. Production Environment and Policy

Based on a brief review of the current policy regime relating to pricing, marketing and trade and current agricultural scenario, a road map for making agriculture profitable and efficient and for restoring farmers' faith in farming emerges clearly. In predominantly agricultural and rural economies,

accelerated agricultural growth and an efficient agricultural sector is the key for reducing hunger, food insecurity and malnutrition at a rapid rate. Acceleration of agricultural growth and improving profitability and efficiency of agriculture in general, requires the following:

- (i) Investment in agricultural research for continuously expanding the productivity potential.
- (ii) Investment in productivity-raising infrastructure like irrigation, soil and water conservation, and integrated natural resource management.
- (iii) Persuading farmers to increasingly shift to land-saving enterprises (livestock and fisheries) and high-value crops (horticulture).
- (iv) Adequate and efficient mechanism for transfer of new technology to farmers and supply of key farm-inputs at affordable prices or user charges.
- (v) Efficient system of post-harvest and on-farm handling of farm-products (training of farmers and provision of appropriate technology).
- (vi) Efficient system of entire chain of marketing activities from farm-gate to consumers.
- (vii) Adequate investment in rural roads and marketing infrastructure.
- (viii) Farmer-friendly marketing, pricing and trade policies.
- (ix) Continuously pursuing the policy of self-sufficiency in staple cereals, which is a necessary condition for household and individual food-security.

6.2. Marketing Policy and System Improvement

- We should speedily move towards one national market for agricultural products, which *inter alia* would require shifting the subject of agricultural marketing from the 'state' list to the 'concurrent' list in the Constitution.
- The amendments in State APMR Acts should be speeded up and model rules/regulations should be adopted in all the states to encourage

contract farming and direct marketing/purchase arrangements from farmers.

- The role of APMCs and State Agricultural Marketing Boards should be redefined to *inter alia* promote value addition in primary markets, rather than just collection of fees and undertaking of construction activities.
- The investment on research and training in post-harvest handling of farm products should be stepped up because the internal rate of return (IRR) for such investments is very high.
- Training of farmers, farm women and rural youth in post-harvest handling and value addition should be scaled-up and encouraged by increasing the scientific staff strength of Krishi Vigyan Kendras (KVK), which now exist in all the rural districts of the country. Every KVK should be provided with an agricultural marketing or agri-business specialist.
- Rural roads being a critical link in marketing of farm products should receive adequate investment in all the areas, especially in hilly, tribal and desert regions. The returns to investment in rural roads, in terms of accelerating rural growth and reducing rural poverty, have been estimated to be very high in India.
- For increasing the farm-gate and retail linkages, through contract farming or otherwise, the efforts towards organizing farmers' marketing groups should be scaled-up. At least 100,000 such groups should be organized and financially supported with the technical support from KVKs, ATMAs or NGOs. Each such group should be financially supported to engage an agri-business manager.
- Evolution and development of supply chains and organized retail outlets should be encouraged to save huge national wastage of farm products that occurs under the present system and in this process, involvement of the existing players should not be endangered as has been successfully demonstrated by some retail chains.
- The adhocism in marketing and trade policies, as has been observed during the past two years

should be stopped because fears of reimposition of marketing restrictions keep the potential investors away and as a consequence, farmers suffer.

6.3. Pricing and Trade Policy

- The policy of minimum support prices should be rigorously pursued and its effective implementation should be ensured for all the crops covered under the scheme and in all the areas, including the eastern states.
- The recent hike in minimum support prices of cereals and other crops is a welcome development, but the hike is inadequate. The MSPs should be further raised in the subsequent seasons. This is justified because the interests of vulnerable sections in terms of cheap staple food are safeguarded under various schemes of PDS, which now cover 50 per cent of India's population. However, effective implementation of all PDS programmes should be ensured.
- The trade policy for agricultural commodities should be dovetailed with domestic price policies by renaming the Commission for Agricultural Costs and Prices as the 'Commission for Agricultural Prices and Trade', and suitably redefining its terms of reference, as suggested by the Alagh Committee.
- Oilseeds and pulses are grown by resource-poor farmers, mostly in the rainfed and dry areas. The policy of liberal imports at low duties has come in the way of growth of agriculture and livelihood of farmers in these areas. The reduced import duties on edible oils imply transfer of around Rs 10000 crore from dryland farmers to edible oil consumers. The import duties on edible oils and pulses should be raised within the bound rates committed by India in WTO. The fundamental question involved is the balancing of interests between farmers and consumers.

6.4. Other Policies

- We should continue and not meddle with the policy of very high degree of self-sufficiency in cereals. The objective of self-sufficiency in cereals should be explicitly announced by the

government and be explicitly mentioned in all official documents.

- As 95 per cent of implicit input subsidies (fertilizers, canal water and electricity for irrigation) go to food crops and the share of marginal and small farmers in these subsidies is proportionally more than their share in operated land, we should not meddle with these subsidies at the current stage of Indian agriculture. Their withdrawal will further squeeze farm incomes and reduce profitability in agriculture. A categorical announcement in this regard will boost the moral of Indian farmers.
- Marginal farmers should be treated as living under safety net as part time farmers and should be provided with cheap inputs and improved technology to improve their food security and livelihoods. Further, they should be encouraged to engage themselves in non-farm activities by improving their skills, both hard and soft.
- The land-lease market should be legalised to help in diversification of rural household incomes, bring existing unused land under productive use, and encourage tiny landholders to engage in other occupations, without fear of losing ownership rights of land.
- Rural-urban migration should be supported by migrant-friendly policies and should be treated as a strategy for improving the incomes of rural households, alleviation of rural poverty and reducing pressure on rural resources. Rural-urban migration has been globally recognised as an important pathway out of rural poverty.

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