

Agriculture and Food Management

8

CHAPTER

Indian agriculture is broadly a story of success. It has done remarkably well in terms of output growth, despite weather and price shocks in the past few years. India is the first in the world in the production of milk, pulses, jute and jute-like fibres, second in rice, wheat, sugarcane, groundnut, vegetables, fruits and cotton production, and is a leading producer of spices and plantation crops as well as livestock, fisheries and poultry. The Eleventh Five Year Plan (2007-12) witnessed an average annual growth of 3.6 per cent in the gross domestic product (GDP) from agriculture and allied sector against a target of 4.0 per cent. While it may appear that the performance of the agriculture and allied sector has fallen short of the target, production has improved remarkably, growing twice as fast as population. India's agricultural exports are booming at a time when many other leading producers are experiencing difficulties. The better agricultural performance is a result of: a) farmers' response to better prices; b) continued technology gains; and c) appropriate and timely policies coming together. Yet India is at a juncture where further reforms are urgently required to achieve greater efficiency and productivity in agriculture for sustaining growth. There is need to have stable and consistent policies where markets play a deserving role and private investment in infrastructure is stepped up. An efficient supply chain that firmly establishes the linkage between retail demand and the farmer will be important. Rationalization of agricultural incentives and strengthening of food price management will also help, together with a predictable trade policy for agriculture. These initiatives need to be coupled with skill development and better research and development in this sector along with improved delivery of credit, seeds, risk management tools, and other inputs ensuring sustainable and climate-resilient agricultural practices. Finally, while the sharp increase in prices of food articles, especially proteins, fruits and vegetables, and the growing foodgrains stocks in public sector continue to be subjects of debate, these may be the pointers towards the need for both relative price shifts responding to shifts in demand and reconsidering traditional instruments of food management.

8.2 Although agriculture, including allied activities, accounted for only 14.1 per cent of the GDP at constant (2004-5) prices in 2011-12, its role in the country's economy is much bigger with its share in total employment according to the 2001 census, continuing to be as high as 58.2 per cent. The declining share of the agriculture and allied sector in

the country's GDP is consistent with normal development trajectory of any economy, but fast agricultural growth remains vital for jobs, incomes, and the food security. The growth target for agriculture in the Twelfth Five Year Plan remains at 4 per cent, as in the Eleventh Five Year Plan.

PERFORMANCE OF THE AGRICULTURE SECTOR

8.3 Average annual growth of the agriculture and allied sector during the Eleventh Five year Plan at 3.6 per cent fell short of the 4 per cent growth target. Realised growth, however, has been much higher than the average annual growth of 2.5 and 2.4 per cent achieved during the Ninth and Tenth Plans, respectively. Growth has also been reasonably stable despite large weather shocks during 2009 (deficient south west monsoon), 2010-11 (drought/deficient rainfall in some states), and 2012-13 (delayed and

deficient monsoon). An important reason for this dynamism has been due to a step-up in the gross capital formation (GCF) in this sector relative to GDP of this sector, which has consistently been improving from 16.1 per cent in 2007-8 to 19.8 per cent in 2011-12 (at constant 2004-5 prices) (Table 8.1).

8.4 Overall GCF in agriculture (including the allied sector) almost doubled in last 10 years and registered a compound average annual growth of 8.1 per cent (Fig 8.1). Rate of growth of GCF accelerated to 9.7 per cent in the Eleventh Plan (2007-12) compared to a growth of 2.7 per cent during the Tenth Plan

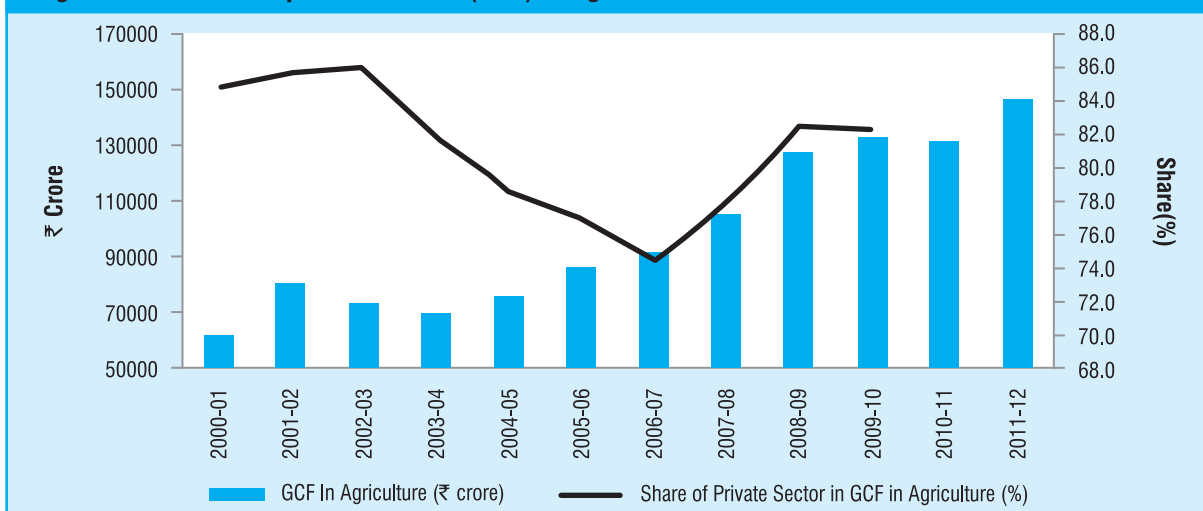
Table 8.1 : Agriculture Sector : Key Indicators

(per cent at 2004-5 prices)

Sl. No.	Item	2007-8	2008-9	2009-10	2010-11	2011-12 1st Revision
1	Growth in GDP in Agriculture & Allied Sector	5.8	0.1	0.8	7.9	3.6
	Share of Agriculture & allied sectors in total GDP	16.8	15.8	14.6	14.5	14.1
	Agriculture	14.3	13.4	12.3	12.3	12.0
	Forestry and logging	1.7	1.6	1.5	1.4	1.4
	Fishing	0.8	0.8	0.8	0.7	0.7
2	Share of agriculture & allied sectors in total Gross Capital Formation (GCF)	6.4	7.8	7.3	6.2	6.8
	Agriculture	5.9	7.2	6.7	5.6	6.2
	Forestry and logging	0.1	0.1	0.1	0.0	0.1
	Fishing	0.5	0.5	0.5	0.5	0.5
3	GCF in Agriculture and Allied sectors as per cent to GDP of the sector	16.1	19.4	20.1	18.4	19.8
4	Employment in the agriculture sector as share of total workers (Census 2001)	58.2				

Source : Central Statistics Office, Directorate of Economics & Statistics (Department of Agriculture and Cooperation) and Population Census 2001.

Figure 8.1 : Gross Capital Formation (GCF) in Agriculture



(2002-07). Average annual growth of private investment at 12.5 per cent during Eleventh Plan (first four years) was significantly higher as against nearly stagnant investment during the Tenth Plan.

Rainfall Distribution during Monsoon 2012

8.5 The performance of Indian agriculture is still heavily dependent on rainfall and south west monsoon (June to September), comprising 75 per cent of total annual rainfall, substantially affects production and productivity of agriculture. During 2012, south-west monsoon rainfall over the country as a whole was 8 per cent less than the long period average (LPA). The seasonal rainfall was 93 per cent of its LPA over north-west India, 96 per cent over central India, 90 per cent over peninsular India, and 89 per cent over north-east India. Out of a total of 36 meteorological subdivisions in the country, 23 received excess/ normal rainfall and in the remaining 13 subdivisions rainfall was deficient (Table 8.2).

8.6 With more than half of the cultivated area dependent on monsoon, advance information about the intensity and spread becomes very important. With the objective of improving monsoon forecasts for the country over all temporal scales (short to medium and long term), the Earth System Science Organization (ESSO)/ Ministry of Earth Sciences has initiated the National Monsoon Mission during the Twelfth Five Year Plan with an estimated budget of ₹ 400 crore. Under this Mission, a dynamic framework for prediction of monsoon over all time

scales will be implemented during the next five years. Joint collaborative research projects will also be undertaken with national and international scientists involved in monsoon research. This is a crucial step towards improving the reliability of monsoon forecasts for appropriate and timely policy interventions to support farmers and food management.

CROP PRODUCTION

8.7 During the Eleventh Plan period, foodgrains production in the country recorded an increasing trend, except in 2009-10 when total foodgrains production declined to 218.1 million tonnes due to severe drought experienced in various parts of the country. During 2011-12, total foodgrains production reached an all-time high of 259.32 million tonnes. However, the production of 2012-13 kharif crops (Table 8.3) is likely to be adversely affected by deficiency in the south-west monsoon and the resultant acreage losses. The overall area coverage at 665.0 lakh ha under foodgrains during kharif 2012-13 shows a decline of 55.8 lakh ha compared to 720.86 lakh ha during kharif 2011-12 (fourth AE). Output is expected to decline in all major crops.

Area, Production, and Yield of Agricultural Crops

8.8 There are limitations to the expansion of area for cultivation. Multiple cropping, improvement in yield levels and shifts in area for certain crops hold the key to the long-term output growth. An analysis of

Table 8.2 : Monsoon Performance 2003-2012 (June-September)

Year	Number of meteorological subdivisions			Percentage of districts with normal/excess rainfall	Percentage of long period average rainfall for the country as a whole
	Normal	Excess	Deficient/ Scanty		
2003	23	8	5	76	102
2004	23	0	13	56	87
2005	24	8	4	72	99
2006	21	6	9	60	100
2007	18	13	5	72	106
2008	31	2	3	76	98
2009	11	3	22	42	78
2010	17	14	5	70	102
2011	26	7	3	76	101
2012	22	1	13	58	92

Source : Indian Meteorological Department.

Table 8.3 : Agricultural Production of Principal Crops

Crop		Production in Million Tonnes/Bales						Rate of Growth	
		Season 2000-01	2006-07	2009-10	2010-11	2011-12	2012-13	CAGR	2012-13/ 2011-12
								(AE)	2011-12/ 2006-07
Rice	Kharif	72.8	80.2	75.9	80.7	92.8	90.7	3.0	-2.3
Coarse Cereals	Kharif	24.9	25.6	23.8	33.4	32.5	28.5	4.9	-12.3
Cereals	Kharif	97.6	105.8	99.7	114.1	125.2	119.2	3.4	-4.8
Pulses	Kharif	4.5	4.8	4.2	7.1	6.1	5.5	4.9	-9.8
Foodgrains	Kharif	102.1	110.6	104	121.2	131.3	124.7	3.5	-5.0
Oilseeds	Kharif	11.94	14.01	15.73	21.92	20.7	19.5	8.1	-5.8
Cotton *	Kharif	9.52	22.63	24.02	33.0	35.2	33.8	9.2	-4.0
Jute**	Kharif	9.32	10.32	11.23	10.01	10.7	10.6	0.7	-0.9
Sugarcane	Kharif	295.96	355.52	292.3	342.38	361.0	334.5	0.3	-7.3
Coarse Cereals	Total	31.1	33.9	33.5	43.7	42.04	38.47	4.4	
Cereals	Total	185.7	203.1	203.4	226.5	242.23	232.57	3.6	
Pulses	Total	11.1	14.2	14.7	18.2	17.09	17.58	3.8	
Foodgrains	Total	196.8	217.3	218.1	244.8	259.32	250.14	3.6	
Oilseeds	Total	18.44	24.29	24.88	32.48	29.8	29.5	4.2	
Share of production in Kharif to total production (per cent)									
Total Cereals		52.6	52.1	49.0	50.4	51.7	51.3		
Total Pulses		40.5	33.8	28.6	39.0	35.7	31.3		
Total Foodgrains		51.9	50.9	47.7	49.5	50.6	49.9		
Total Oilseeds		64.8	57.7	63.2	67.5	69.5	66.1		

Source : Directorate of Economics and Statistics, Department of Agriculture and Cooperation.

*Bales of 170 kgs each. ** Bales of 180 kgs each.

the all-India compound annual growth rate (CAGR) in the indices of area, production, and yield of major agricultural crops during the last three decades

indicates significant progress towards increasing production, yield levels and crop diversification (Table 8.4).

Table 8.4 : CAGRs of Area, Production, and Yield Indices of Principal Crops during 1980-1 to 1989-90, 1990-1 to 1999-2000 (Base : TE 1981-2=100), and 2000-1 to 2011-12 (Base: TE 1993-4=100) (% per annum)

	1980-1 to 1989-90			1990-1 to 1999-2000			2000-1 to 2011-12*		
	Area	Production	Yield	Area	Production	Yield	Area	Production	Yield
Rice	0.41	3.62	3.19	0.68	2.02	1.34	0.00	1.78	1.78
Wheat	0.46	3.57	3.10	1.72	3.57	1.83	1.35	2.61	1.24
Coarse cereals	-1.34	0.40	1.62	-2.12	-0.02	1.82	-0.81	3.01	3.85
Total pulses	-0.09	1.52	1.61	-0.60	0.59	0.93	1.60	3.69	2.06
Sugarcane	1.44	2.70	1.24	-0.07	2.73	1.05	1.38	2.07	0.68
Total oilseeds	1.51	5.20	2.43	0.86	1.63	1.15	2.12	3.36	1.22
Cotton	-1.25	2.80	4.10	2.71	2.29	-0.41	3.22	13.53	9.99

Source : Department of Agriculture and Cooperation.

*As per fourth AE.

8.9 Overall, the 1980-90 period witnessed relatively higher growth in production and yield in major crops compared to the 1990-2000 period except for the marginal increase in growth of yield in coarse cereals and the same levels of growth in production of wheat and sugarcane. Further, a lower growth (coarse cereals, pulses, sugarcane) and marginally higher growth (rice, oilseeds) was observed in the area under these major crops during the 1990-2000 period vis a vis 1980-1990 except in wheat and cotton where

growth rate was 1.72 per cent and 2.71 per cent respectively. By and large the growth rates achieved in the 1980-90 period could not be sustained during the 1990-2000 period. In coarse cereals yield increases were able to offset a negative growth in area. In both wheat and rice, in all the three sub periods, there was an increase in area and yield, though rate of increase in yield levels had significantly moderated in latter periods. Yield levels significantly improved for cotton, pulses and coarse cereals during

Box 8.1 : Sugar sector Reforms in India

- India is the largest consumer and second largest producer of sugar after Brazil. Sugar and Sugarcane are notified as essential commodities under the Essential Commodities Act 1955. The production of sugarcane during 2012-13 is estimated at 334.54 million tonnes. However the Indian sugar sector suffers from policy inconsistency and unpredictability. The Sugar industry in India is over-regulated and prone to cyclicity due to price interventions. Deregulation of the sugar industry has been widely debated for a long time. From a purely economic point of view, greater play of market forces would provide better prices and serve the interests of all stakeholders. The government should come into the picture only in situations where absolutely necessary. Export bans and controls could be replaced with small variable external tariffs to stabilize prices.
- A report on 'Regulation of the Sugar Sector in India: The way forward' has been submitted by the Committee under the chairmanship of Dr C. Rangarajan, Chairman of the Economic Advisory Council to the Prime Minister. The ways forward suggested include: a) phasing out cane reservation area; b) dispensing with minimum distance criteria; c) dispensing with the levy sugar system; states that want to provide sugar under the PDS may procure it from the market according to their requirement, fix the issue price and subsidize from their own budgets. Currently, there is an implicit cross-subsidy on account of the levy as sugar mills are under a transition, some level of central support to help states meet the cost to be incurred on this account may be provided for a transitory period; d) dispensing with the regulated release mechanism (of non-levy) sugar; e) stable trade policy; no quantitative or movement restrictions on by-products like molasses and ethanol and dispensing with compulsory jute packing. A stable, predictable, and consistent policy reforms have to be brought about in a fiscally neutral manner and issues considered for implementation in a phased manner.

Box 8.2 : Edible Oil Economy

- India is one of the largest producers of oilseeds in the world. However, 50 per cent of its domestic requirements are met through imports, out of which crude palm oil and RBD palmolein constitute about 77 per cent and soyabean oil constitutes about 12 per cent. Import dependence was about 3 per cent during 1992-3. The production of oilseeds, though it has increased in recent years (from 184.40 lakh tons in 2000-1 to 297.99 lakh tons in 2011-12), has not kept pace with the demand for edible oils in India. Imports have helped raise the per capita availability of edible oils which has increased from 5.8 kg in 1992-3 increased to 14.5kg in 2010-11.
- One instrument for promoting future domestic production is calibration of the import duty structure. Large imports of edible oils are primarily due to competitive prices of edible oils in the international market and the import duty structure which has been sharply reduced to near zero levels over time to protect consumers. India has a market share that allows it to set some independent tariff policy that can meet both goals better. Considering the situation, it is time to frame a price band for edible oils in a manner that harmonizes the interests of domestic farmers, processors, and consumers through imposition of import duty at an appropriate rate. The import duty would also generate revenue, which could also be utilized for an oilseeds development programme. Recently the tariff value of all edible oils which had remained unchanged since 2006 was updated to market levels. This is a right step for aligning the tariffs to current prices for edible oils in the international market. By freezing the tariff value, imports had become more attractive than domestic refining. Over time, domestic oil palm production may also gain.
- India is also fortunate in having a wide range of oilseed crops grown in its different agro-climatic zones, including high-value premium crops. Recently export of edible oils in branded consumer packs upto 5 kg has been allowed without any quantitative limit having minimum export price (MEP) of US \$ 1500 per ton in order to encourage export of high value premium edible oils. Farmers respond to prices. The aim of policy is to consistently enhance their competitiveness.

2000-2012. Cotton and pulses have become two 'star' performers, with Bt cotton and the pulses intensification programme being important reasons; oilseeds such as mustard and ground nuts too are responding reasonably well to better prices, as is the case in sugarcane (Boxes 8.1 and 8.2).

AGRICULTURAL INPUTS

8.10 Improvement in yield, which is the key to the long-term growth, depends on efficient use of quality seeds, fertilizers, pesticides, micronutrients, and irrigation. Each of these plays a role in determining yield level and in turn augmentation in level of production.

Seeds

8.11 Seeds are a critical input for agricultural crops. Farmers typically rely on farm-saved seeds, over use of which leads to a low seed replacement rate and poor yield. An Indian Seed Programme for encouraging the development of new varieties and protecting the rights of farmers and plant breeders has been put in place with the participation of central and state governments, the Indian Council of Agricultural Research (ICAR), state agricultural universities, seed cooperatives, and private sectors. A central-sector Scheme for Development and Strengthening of Infrastructure Facilities for Production and Distribution of Quality Seeds with the aim of making quality seeds of various crops available to farmers at affordable price is under implementation since 2005-6. As a result of this initiative, availability of certified quality seeds has increased from 140.5 lakh quintals in 2005-6 to 328.6 lakh quintals in 2012-13; 426 seed-processing plants have been sanctioned and an amount of Rs 37.24 crore released to small entrepreneurs for creation of 85.89 lakh quintal seed-processing capacity and 30.30 lakh quintal storage capacity; and seed-processing capacity of 4.7 lakh quintals and seed storage capacity of 2.4 lakh quintals has been created in the public sector during 2011-12 (up to 31.10.2012). For achieving timely availability of seeds at affordable price to farmers in hilly/remote areas of north-eastern states, a Transport Subsidy on Movement of Seeds scheme is in operation whereby grants-in-aid of ₹ 12.6 crore was reimbursed to various implementing agencies for movement of 9.7 lakh quintals of seeds during the Eleventh Five Year Plan. A Sub-Mission on Seed and Planting Material under the National Mission for Agricultural Extension

and Technology with an allocation of ₹ 2088 crore is under consideration for the Twelfth Five Year Plan.

Mechanization and Technology

8.12 Tractors are the main power source for various farm operations and India is the world leader in tractor production with over 5 lakh tractors produced annually. Studies reveal that adoption of appropriate mechanization of farm operations can increase production and farm productivity by 10-15 per cent, cropping intensity by 5-20 per cent and effect savings in seeds (up to 15-20 per cent), fertilizer and chemicals (up to 15-20 per cent), and time and labour (up to 20-30 per cent). Progress in farm mechanisation at present is hindered by the low and erratic availability of farm power and shrinking holding sizes. Average farm power availability for the cultivated areas of the country has increased from 0.48 kW/ha in 1975-76 to 1.73 kW/ha at present and is likely to rise to 2.0 kW/ha by 2015. Shrinking landholding size with majority of the farmers being small and marginal is also making individual ownership of agricultural machinery progressively uneconomical. This requires steps for the setting up of custom-hiring centres/high-tech machinery banks so that small and marginal farmers can reap the benefits of farm mechanization. The government has initiated a Sub-Mission on Agriculture Mechanization in the Twelfth Five year Plan, with a focus on custom hiring.

Integrated Nutrient Management

8.13 India meets 80 per cent of its urea requirement through indigenous production but is largely import dependent for meeting its requirements of the potassic (K) and phosphatic (P) fertilizer requirements. The consumption of fertilizers in nutrient terms has shown improvement, indicating that the policies for increasing availability and consumption of fertilizers at affordable prices in the country have been successful (Table 8.5). However over-use of nitrogenous and limited use of P and K fertilizers are matters of great concern and need appropriate price incentives by reducing fertilizer subsidies so that sustainable practices are encouraged.

Policy Initiatives for Fertilizers

8.14 The government has notified the New Investment Policy 2012 (NIP-2012) in the urea sector which will encourage investments leading to increase in indigenous capacities, reduction in import

Table 8.5 : Production and Consumption of Fertilizers (in lakh tonnes)

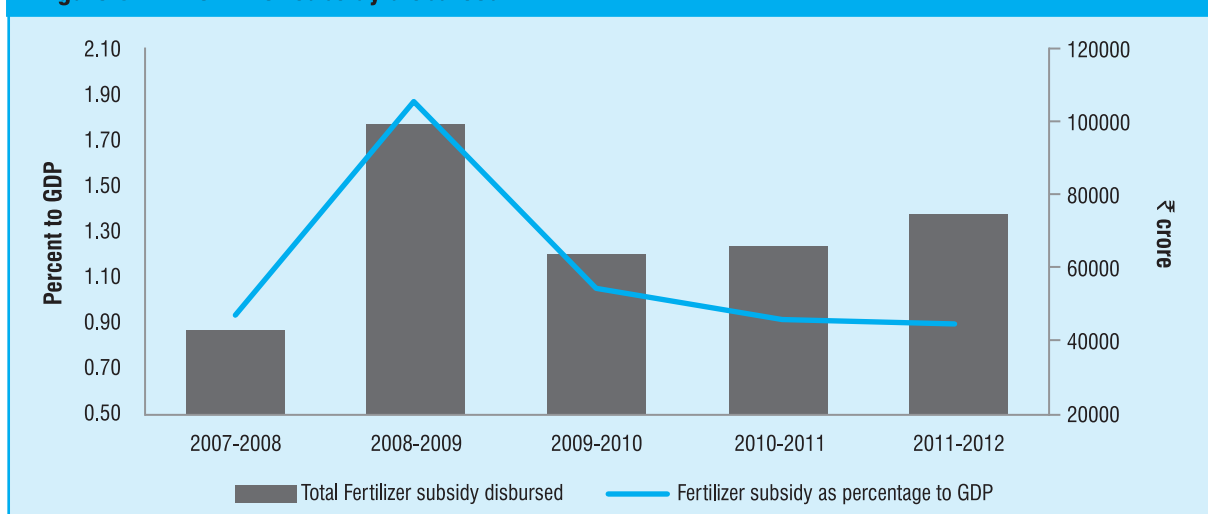
	2007-8	2008-9	2009-10	2010-11	2011-12	2012-13*
Production of urea, DAP and complex fertilizers						
Urea	198.60	199.20	211.12	218.80	219.84	223.87
DAP	42.12	29.93	42.46	35.37	39.63	37.10
Complex fertilizers	58.50	68.48	80.38	87.27	77.70	79.47
Consumption of fertilizers in nutrient terms						
Nitrogenous (N)	144.19	150.90	155.80	165.58	173.00	
Phosphatic (P)	55.15	65.06	72.74	80.50	79.14	
Potassic (K)	26.36	33.13	36.32	35.14	25.25	
Total (N+P+K)	225.70	249.09	264.86	281.22	277.39	
Per ha consumption (kg)	116.50	127.20	135.76	144.14	141.30	

Source : Department of Fertilizers.

* Estimated.

dependence and savings in subsidy due to import substitution at prices below import parity price (IPP). It is expected that fresh investment will come for expansion, revival, and setting up of brownfield and greenfield projects. Adequate provisions are made in NIP-2012 to ensure the long-term availability of gas required for expansion and greenfield/brownfield projects. In the event of increase in gas prices or fall in IPP, provisions are made in the policy to protect the interest of investors. It has been decided to implement direct cash transfer to the farmers in a phased manner, which would help target small, marginal, and other farmers and bring more transparency in subsidy disbursement. Eleven districts have been identified for piloting this across 10 states.

8.15 Under the Nutrient Based Subsidy (NBS) scheme for phosphatic and potassic (P&K) fertilizers implemented in 2010, a fixed amount of subsidy, decided on annual basis, is provided to each grade of P&K fertilizer, depending upon its nutrient content. An additional subsidy is also provided to secondary and micro-nutrients. Under this scheme, manufacturers/marketers are allowed to fix the maximum retail price (MRP). Presently (as in November 2012), farmers pay only 58 to 73 per cent of the delivered cost of P&K fertilizers; the rest is borne by the Government of India in the form of subsidy. However, the government continues to share a substantial burden in the form of fertilizer subsidy (Figure 8.2).

Figure 8.2 : Fertilizer subsidy disbursed

Irrigation

8.16 India has made considerable progress in developing irrigation infrastructure. However irrigation efficiency is low for both surface and ground waters. In order to help the rainfed farmers improve productivity and profitability, in situ soil and water conservation practices are developed for different agro-climatic regions with special emphasis on effective rainwater management along with a suite of location-specific technologies. Substantial irrigation potential has been created through major and medium irrigation schemes. The central government initiated the Accelerated Irrigation Benefit Programme (AIBP) in 1996-7 for extending assistance for the completion of incomplete irrigation schemes. Under the AIBP, ₹ 55416 crore of central loan assistance (CLA)/grant has been released up to 31 December 2012. An irrigation potential of 7622.5 thousand ha is reported to have been created by states, from major / medium /minor irrigation projects under the AIBP till March 2011. The Command Area Development Programme has also been amalgamated with the AIBP to reduce the gap between irrigation potential that has created and that is utilized.

Agriculture Research and Education

8.17 Agriculture research has played a vital role in agricultural transformation. Indian Council of Agricultural Research (ICAR) Institutes undertake basic, strategic, and applied research, focusing particularly on problems of rainfed agriculture, while State Agricultural Universities (SAUs) concentrate on generating required manpower and on applied and adaptive research to address local problems. Public-sector agricultural R&D spending to agricultural GDP in India remained in the range of 0.50 to 0.59 per cent in the last decade, needing to be enhanced considerably. The ICAR in partnership with SAUs has developed a number of technologies that are being used by farmers on a large scale. These includes 9838 tonnes of breeder seed, 13,228 tonnes of foundation seed, 20,541 tonnes of certified seed, 14,860 tonnes of truthfully labelled seed, about 40,000 tissue culture plantlets of field crops and three new improved varieties of sugarcane during 2011-12.

PRICE POLICY FOR AGRICULTURAL PRODUCE

8.18 The government's price policy for agricultural produce seeks to ensure remunerative prices to

growers for their produce with a view to encourage higher investment and production as well as safeguarding the interests of consumers by making available supplies at reasonable prices. The price policy also seeks to evolve a balanced and integrated price structure in the perspective of the overall needs of the economy. To achieve this end, the government in each season announces Minimum Support Prices (MSPs) for major agricultural commodities and organizes purchase operations, wherever required, through public, cooperative, and other designated agencies to ensure that prices do not fall below that level. It decides on the support prices for various agricultural commodities taking into account the recommendations of the Commission for Agricultural Costs and Prices (CACPC), the views of state governments and central ministries as well as such other relevant factors as are considered important for fixation of support prices.

8.19 MSP is announced well ahead of the sowing season so that farmers can take informed decisions on cropping. Taking into account the relevant factors especially for encouraging farmers that these are remunerative, the government fixed the MSPs for kharif crops of the 2012-13 season and rabi crops of 2012-13 season to be marketed in 2013-14. The substantial price increases in many crops are a noticeable feature (Table 8.6) especially at a time when the global food prices were also on a rising trend (Figures 8.3 and 8.4). This puts in substantial fiscal stress on the government, discussed in detail later in the Food Management section of this chapter.

8.20 Further, the Government of India has centrally designated agencies to undertake Price Support Scheme (PSS) operations. The losses, if any, incurred by the central agencies for undertaking PSS operations are fully reimbursed by the central government. The government also implements a Market Intervention Scheme (MIS) on the request of states/union territories (UTs) for horticultural and agricultural commodities, generally perishable in nature and that are not covered under the PSS. States/UTs bear 50 per cent of the loss (25 per cent in the case of north-eastern states), if any, incurred on its implementation. However the loss is restricted up to 25 per cent of total procurement value. Profit earned, if any, in implementing the MIS is retained by the procuring agencies. A few procurement operations were made by NAFED in 2011-12 in gram and urad in Rajasthan and milling copra in the Andaman & Nicobar islands and MIS was

Table 8.6 : MSPs

(₹ per quintal)

	2009-10	2010-11	2011-12	2012-13	Difference between 2012-13 and 2011-12 Prices
Kharif Crops					
Paddy (Common)	1000	1000	1080	1250	170
Paddy (Gr.A)	1030	1030	1110	1280	170
Jowar (Hybrid)	840	880	980	1500	520
Jowar (Maldandi)	860	900	1000	1520	520
Bajra	840	880	980	1175	195
Maize	840	880	980	1175	195
Ragi	915	965	1050	1500	450
Arhar (Tur)	2300	3500	3700	3850	150
Moong	2760	3670	4000	4400	400
Urad	2520	3400	3800	4300	500
Groundnut in shell	2100	2300	2700	3700	1000
Sunflower	2215	2350	2800	3700	900
Soyabean (black)	1350	1400	1650	2200	550
Soyabean (Yellow)	1390	1440	1690	2240	550
Sesamum	2850	2900	3400	4200	800
Nigerseed	2405	2450	2900	3500	600
Rabi Crops					
Wheat	1100	1170	1285	1350	65
Barley	750	780	980	980	0
Gram	1760	2100	2800	3000	200
Masur (lentil)	1870	2250	2800	2900	100
Rapeseed/mustard	1830	1850	2500	3000	500
Safflower	1680	1800	2500	2800	300

Source : Department of Agriculture and Cooperation.

Note : inclusive of bonus wherever applicable.

Figure 8.3 : Trend in world prices for some important agricultural crops

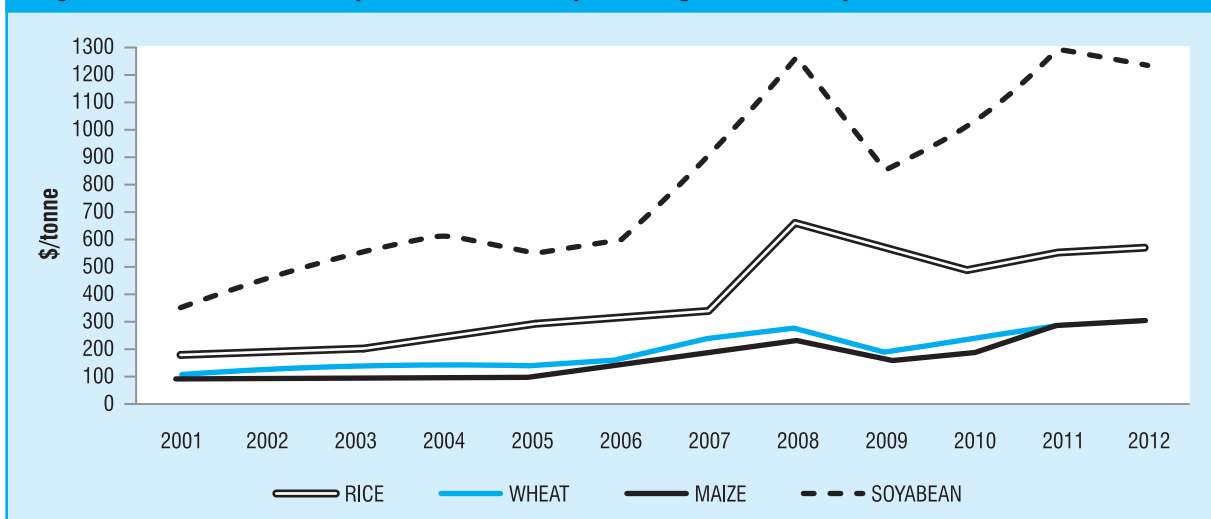
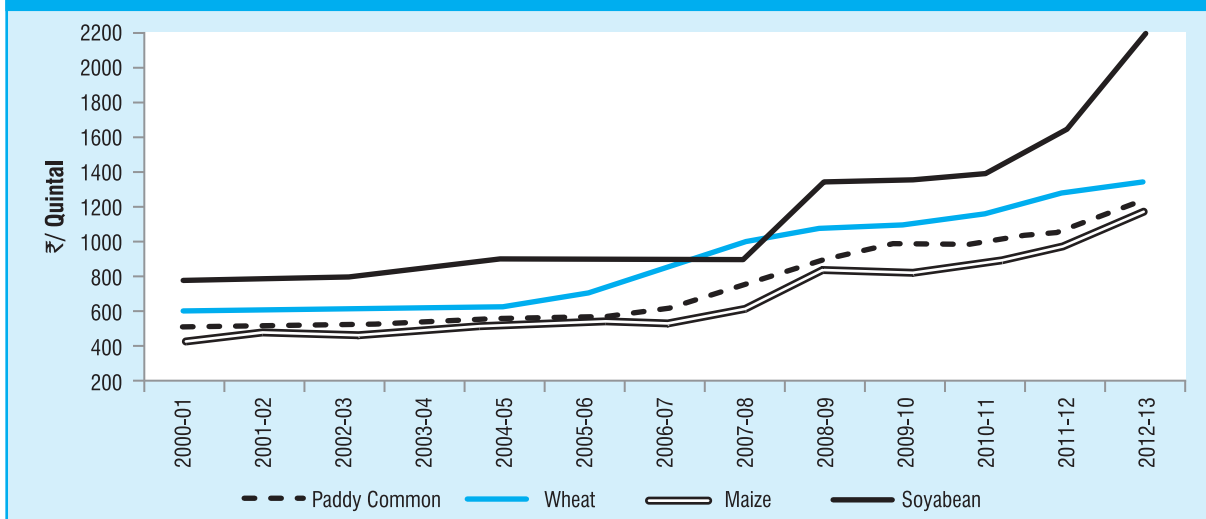


Figure 8.4 : Trends in MSPs of some important agricultural crops

implemented in arecanut, onion, and turmeric in Karnataka; apple in Himachal Pradesh; and potato in Uttar Pradesh.

MAJOR SCHEMES / PROGRAMMES FOR THE AGRICULTURAL SECTOR

8.21 Agriculture being a state subject, primary responsibility for increasing agriculture production, enhancing productivity and exploring the untapped potential of the sector rests with the states. The central government supplements the efforts of state governments through centrally sponsored and central-sector schemes.

National Food Security Mission

8.22 To enhance the production of rice, wheat, and pulses by 10, 8, and 2 million tonnes respectively by the end of the Eleventh Plan through area expansion and productivity enhancement; restoring soil fertility and productivity; creating employment opportunities; and enhancing farm-level economy to restore the confidence of farmers of targeted districts, a centrally sponsored National Food Security Mission (NFSM) was launched in 2007-8 with three major components, viz. NFSM-Rice, NFSM-Wheat, and NFSM-Pulses. During the Eleventh Five Year Plan, NFSM-Rice was implemented in 144 districts of 16 states, NFSM-Wheat in 142 districts of 9 states and NFSM-Pulses in 468 districts of 16 states. In 2012-13, six north-eastern states, viz. Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, and Sikkim were included under NFSM-Rice and the hill states of Himachal Pradesh, and Uttarakhand under NFSM-Rice and Wheat and J & K under NFSM- wheat.

Specifically, during 2012-13 a Special Plan to achieve 19+ million tonnes of pulses production during kharif 2012 was launched with a total allocation of ₹153.5 crore comprising ₹107.3 crore for activities to be undertaken under the NFSM and ₹46.2 crore for activities to be undertaken under the Micro Irrigation Scheme. During 2012-13, ₹ 87.0 crore has been allocated for additional area coverage of pulses during rabi/summer 2012-13.

Rashtriya Krishi Vikas Yojana

8.23 The Rashtriya Krishi Vikas Yojana (RKVY) was launched in 2007-8 with an outlay of ₹ 25,000 crore in the Eleventh Plan for incentivizing states to enhance public investment. States were provided ₹ 22,408.79 crore under the RKVY during Eleventh Five Year Plan. The RKVY format permits taking up national priorities as sub-schemes, allowing the states flexibility in project selection and implementation. Allocation under the RKVY for 2012-13 is ₹ 9217 crore. The RKVY links 50 per cent of central assistance to those states that have stepped up the percentage of state plan expenditure on the agriculture and allied sector. A total of 5768 projects were taken up by states in the Eleventh Plan of which 3343 had been completed till December end 2012.

National Mission for Sustainable Agriculture

8.24 Climate change poses a major challenge to agricultural production and productivity. The National Mission for Sustainable Agriculture (NMSA), under the aegis of the National Action Plan on Climate Change (NAPCC), seeks to address issues related

to 'Sustainable Agriculture' in the context of risks associated with climate change. It hopes to achieve its objectives by devising appropriate adaptation and mitigation strategies for ensuring food security, enhancing livelihood opportunities, and contributing to economic stability at national level. The NMSA has already been accorded 'in-principle' approval by Prime Minister's Council on Climate Change. During the Twelfth Five year Plan, climate change adaptation and mitigation strategies will be operationalized by restructuring the existing programmes.

Bringing Green Revolution to Eastern India

8.25 Bringing Green Revolution to Eastern India, initiated in 2010-11, intends to address the constraints limiting the productivity of 'rice based cropping systems' in eastern India comprising seven states, viz. Assam, Bihar, Chhattisgarh, Jharkhand, Odisha, Eastern Uttar Pradesh, and West Bengal. ₹ 400 crore each was allocated for the programme during 2010-11 and 2011-12 and of ₹1000 crore during 2012-13.

Rainfed Area Development Programme

8.26 Given the importance of rainfed agriculture in India, the Rainfed Area Development Programme (RADP) was launched by the government as a pilot scheme under the RKVY focusing on small and marginal farmers and farming systems. It adopted a holistic 'end-to-end approach' covering integrated farming, on-farm water management, storage-marketing, and value addition of farm produce in order to enhance farmers' income in rainfed areas. During 2012-13, the RADP is being implemented in 22 states and will be substantially upscaled during the Twelfth Plan as a programme component under the NMSA.

Macro Management of Agriculture

8.27 The Macro Management of Agriculture (MMA) scheme, revised in 2008, has formula-based allocation criteria and provides assistance to states/UTs as 100 per cent grant. Out of the total outlay of ₹ 5500 crore for the Eleventh Five Year Plan, funds to the tune of ₹ 4625.24 crore have been utilized/released to states/UTs. Of an outlay of Rs 900 crore approved for 2012-13, ₹ 680.51 crore had been released till date.

Integrated Scheme of Oilseeds, Pulses, Oil Palm, and Maize

8.28 The Integrated Scheme of Oilseeds, Pulses, Oil Palm, and Maize (ISOPOM) provides flexibility to states in implementation based on a regionally differentiated approach for promoting crop diversification and providing a focus to the programme. Under the Scheme, assistance is provided for purchase of breeder seed, production of foundation seed, production and distribution of certified seed, distribution of seed minikits, distribution of plant protection chemicals, plant protection equipments and weedicides, supply of rhizobium culture/phosphate solubilizing bacteria, supply of improved farm implements, distribution of gypsum/pyrite/liming/dolomite, distribution of sprinkler sets and water-carrying pipes, and publicity for encouraging farmers to grow oilseeds and maize.

National Horticulture Mission

8.29 The National Horticulture Mission (NHM) covered 18 states and three UTs during the Eleventh Plan. The scheme aims at the holistic development of the horticulture sector by ensuring forward and backward linkages through adopting a cluster approach with the active participation of all stakeholders. During the Eleventh Plan period 16.7 lakh ha of land was brought under horticulture / high-value horticulture crops.

8.30 In order to harness production gains by reducing post harvest losses and creating value addition and better delivery mechanism to consumers through a cold chain system, a National Centre for Cold-Chain Development (NCCD) has been set up. Setting up of the NCCD is expected to provide the necessary boost for adding capacity and creating a cold chain network in the country. Over the years, the availability of horticultural produce has improved significantly (Table 8.7).

Agricultural Credit

8.31 Timely availability of agricultural credit at reasonable rate, especially for small and marginal farmers is crucial for agricultural-sector growth. Government has taken several measures for improving the flow of agricultural credit:

- (i) The flow of agricultural credit since 2003-4 has consistently exceeded the target. The target of agriculture credit flow for the year 2012-13 was fixed at ₹ 5,75,000 crore, against which achievement as of September 2012 was ₹ 2,39,629 crore.

Table 8.7 : Per Capita Availability and Production of Fruits and Vegetables

	Per capita availability (gram / per person / day)			Production of fruits & vegetables (million tonnes)		
	Fruit	Vegetables	Total	Fruit	Vegetables	Total
2001-02	114	236	350	43	89	132
2007-08	158	309	467	66	128	194
2008-09	163	306	469	68	129	197
2009-10	167	313	480	71	134	205
2010-11	170	332	502	75	147	222
2011-12	172	350	522	76	156	232

Source : Department of Agriculture and Cooperation.

- (ii) Farmers have been receiving crop loans up to a principal amount of ₹ 3 lakh at 7 per cent rate of interest since 2006-7. The effective rate of interest for farmers who promptly repay their crop loans during 2012-13 will be 4 per cent per annum.
- (iii) The Kisan Credit Card (KCC) scheme has been effective for extending agriculture credit. A revised KCC scheme was introduced in March 2012 in which the KCC passbook has been replaced by an ATM-cum-debit card to all eligible and willing farmers in a time-bound manner. The number of operative KCCs issued by cooperative and regional rural banks as on 31 August 2012 was 4.07 crore. The number of cumulative KCCs issued by commercial banks as on 31 March 2012 was 5.47 crore.
- (iv) Farmers were granted post-harvest loans against negotiable warehouse receipts at commercial rates. In order to discourage distress sale by farmers and to encourage them to store their produce in warehouses against warehouse receipts, the benefit of interest subvention has been extended to small and marginal farmers having KCCs for a further period of up to six months post-harvest on the same rate as crop loans.
- (v) The government is implementing a revival package for Short-term Rural Cooperative Credit Structure involving a financial outlay of ₹ 13,596 crore. Twenty-five state governments have signed memorandums of understanding (MoU) with the Gol and the National Bank for Agriculture and Rural Development (NABARD). As of July 2012, ₹ 9002.11 crore had been released by NABARD as the Gol share for recapitalization of 53,202 primary agriculture cooperative societies (PACS) in seventeen states.

Major crop insurance schemes

8.32 Indian agriculture faces risks from many factors ranging from weather changes, and natural disasters to uncertainties in output prices. Hence risk management and risk mitigation are of utmost importance. The government administers a number of crop insurance schemes.

National Agricultural Insurance Scheme

8.33 The Agriculture Insurance Company of India Ltd. implements the National Agricultural Insurance Scheme (NAIS). At present the scheme is being implemented by 24 states and two UTs. Since inception, claims of about ₹ 24,246 crore have been paid against premium income of about ₹ 7580 crore benefiting about 511 lakh farmers.

Modified NAIS

8.34 With the aim of further improving crop insurance schemes, the Modified NAIS (MNAIS) is under implementation on pilot basis in 50 districts of 16 states in the country from rabi 2010-11 season. Some of the major improvements made in the MNAIS are actuarial premium with subsidy in premium at different rates, all claims liability to be on the insurer, unit area of insurance reduced to village panchayat level for major crops, indemnity for prevented/sowing/planting risk and for post-harvest losses due to cyclone, on account payment up to 25 per cent advance of likely claims as immediate relief, more proficient basis for calculation of threshold yield, and allowing private-sector insurers with adequate infrastructure. During 2011-12, about 11.80 lakh farmers with an area of about 13.48 lakh ha have been covered, insuring a sum amounting to ₹ 3195 crore.

Pilot Weather Based Crop Insurance Scheme

8.35 The Pilot Weather Based Crop Insurance Scheme is intended to insure farmers against adverse weather incidence. From kharif 2007-8 to rabi 2011-12, 370.69 lakh farmers cultivating an area of about 520.86 lakh ha with sum insured of about ₹ 64,905 crore have been covered under the scheme. Claims of about ₹ 3208 crore have been paid against premium of about ₹ 5791 crore. The fund requirements as estimated by the implementing agency for these schemes for the year 2012-13 are ₹ 2200 crore.

AGRICULTURAL MARKETING

8.36 Organized marketing of agricultural commodities has been promoted in the country through a network of regulated markets to ensure reasonable gains to farmers and consumers by creating a market environment conducive for fair play of supply and demand. In order to bring about reforms in the sector, a model Agricultural Produce Marketing (Development and Regulation) (APMC) Act was prepared in 2003. Though the process of market reforms has been initiated by different state governments through amendments in the present APMC Act on the lines of Model Act, many of the states are yet to adopt the Model Act uniformly. It is therefore necessary to complete the process of market reforms early in order to provide farmers an alternative competitive marketing channel for transaction of their agricultural produce at remunerative prices. Development of an agricultural marketing infrastructure is the foremost requirement for the growth of a comprehensive and integrated agricultural marketing system in the country. For the purpose, the Ministry of Agriculture is implementing demand-driven Plan schemes by providing assistance to entrepreneurs in the form of back-ended credit-linked subsidy, viz. the Grameen Bhandaran Yojana and Development/Strengthening of Agricultural Marketing Infrastructure, Grading and Standardization.

Extension Services

8.37 The State Extension Programmes for Extension Reforms scheme was launched in 2005-6, aiming at making the extension system farmer driven and farmer accountable by providing new institutional arrangements for technology dissemination. This has been done through the setting up of Agricultural Technology Management Agencies (ATMA) at district

(614 rural districts in 28 states and 3 UTs) level to operationalize the extension reforms. The ATMAs have active participation of farmers/farmer groups, non-governmental organizations (NGOs), and other stakeholders operating at district level and below. Gender concerns are being mainstreamed by mandating that 30 per cent of resources on programmes and activities are utilized by women farmers and women extension functionaries. Since inception, 2.19 crore farmers, of whom 25 per cent are women farmers, have benefited under various extension activities. Restructuring of all extension and IT-related schemes of the department and putting them under one mission scheme namely the National Mission on Agriculture Extension (NMAE) during the Twelfth Plan has been proposed.

ANIMAL HUSBANDARY, DAIRYING, AND FISHERIES

8.38 The livestock sector achieved an average growth rate of 4.8 per cent during the Eleventh Five Year Plan. In 2011-12, the production of milk was estimated at 127.9 million tonnes, eggs at 66.45 billion numbers, wool at 44.73 million kg, and meat at 5.51 million tonnes. The Livestock Census (2007) has placed total livestock population at 529.7 million and poultry birds at 648.8 million.

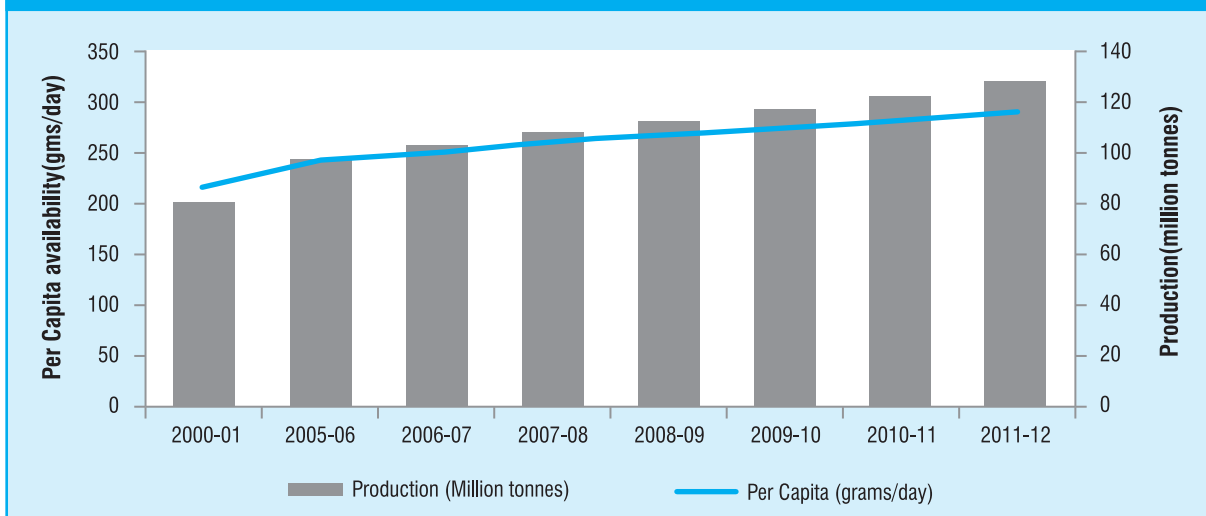
Dairy Sector

8.39 India ranks first in the world in milk production, which has gone up from 53.9 million tonnes in 1990-1 to 127.9 million tonnes in 2011-12. The per capita availability of milk has also increased from 176 grams per day in 1990-1 to 290 grams per day in 2011-12. This is comparable with the world per capita availability of milk at 289.31 grams per day for 2011.

8.40 This represents sustained growth in the availability of milk and milk products for the growing population of the country, apart from being an important secondary source of income for rural families (Figure 8.5).

8.41 The Intensive Dairy Development Programme, Strengthening Infrastructure for Quality and Clean Milk Production, Assistance to Cooperatives, and Dairy Entrepreneurship Development Scheme are some of Govt's important schemes/programmes for meeting the growing demand for milk. The National Project for Cattle and Buffalo Breeding has been under implementation since 2000. A new scheme called the National Dairy Plan Phase I has been

Figure 8.5 : Production and Per capita availability of Milk



launched in March 2012 with the objectives of improving productivity of milch animals, strengthening and expanding village-level infrastructure for milk procurement, and providing producers greater access to the market in the dairy sector.

Poultry

8.42 The poultry sector encompasses a range of farming systems from highly industrialized and export oriented at one end to the backyard, small, and marginal model addressing livelihood issues at the other end. Per capita availability of eggs was around 55 per year in 2011-12. In order to encourage entrepreneurship skills of individuals, a central-sector Poultry Venture Capital Fund scheme is being implemented in capital subsidy mode since 1 April 2011, covering various poultry activities.

Feed and Fodder

8.43 Adequate availability of feed and fodder for livestock is vital for increasing milk production and sustaining the ongoing genetic improvement programme. Green fodder shortage in the country is estimated at about 34 per cent. The central government has put in place a modified Centrally Sponsored Fodder and Feed Development Scheme since 2010 to supplement the efforts of states to improve fodder production. Besides, the Accelerated Fodder Development Programme was launched as a component of the RKVY in 2011-12 to promote production of fodder.

Fisheries

8.44 Fish is an important source of protein and also an important source of livelihood. Production of

Figure 8.6 : Export of marine products

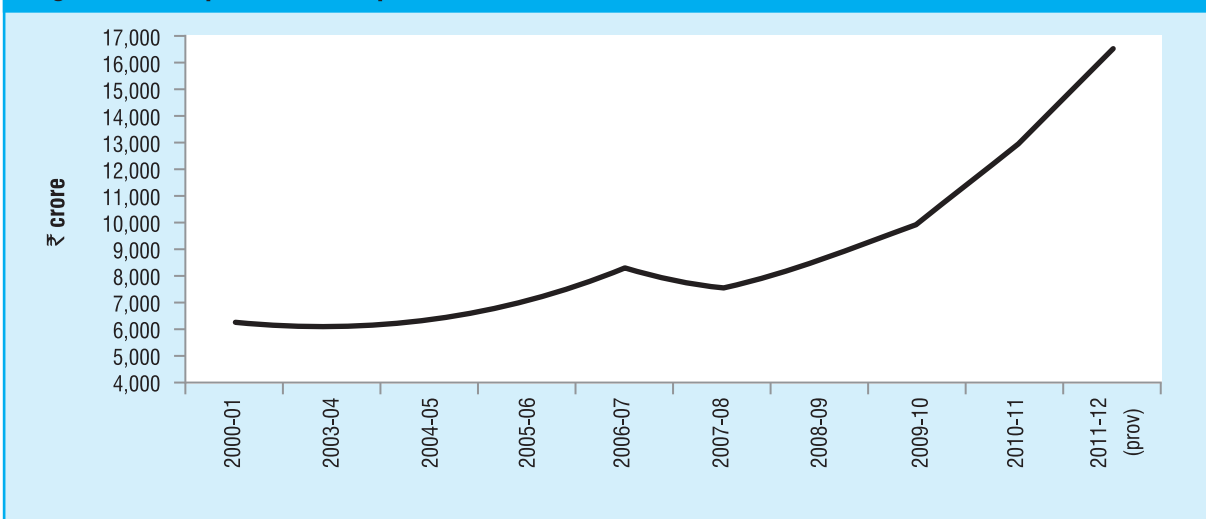


Table 8.8 : Procurement and Offtake of Wheat and Rice (million tonnes)

	2008-09	2009-10	2010-11	2011-12	2012-13
Procurement					
Rice	34.1	32.0	34.2	35.0	23.0 *
Wheat	22.7	25.4	22.5	28.3	38.1
Total	56.8	57.4	56.7	63.3	52.8
Offtake					
Rice	24.62	27.37	29.93	32.12	24.02 **
Wheat	14.87	22.34	23.07	24.26	23.13 **
Total	39.49	49.71	53.00	56.38	47.16**

Source : Department of Food and Public Distribution.

Note : Figures of procurement of wheat and rice are marketing season wise.

* As on 07.02.2013 ** 2012-13 (upto December, 2012)

fish, both marine and inland, has gone up from 5.6 million tonnes in 2000-1 to 8.7 million tonnes in 2011-12 (provisional). The exports of marine products have increased significantly as evident from Figure 8.6.

FOOD MANAGEMENT

8.45 The main objectives of food management are procurement of foodgrains from farmers at remunerative prices, distribution of foodgrains to consumers, particularly the vulnerable sections of society, at affordable prices, and maintenance of food buffers for food security and price stability. The instruments used are MSP and central issue price (CIP). The nodal agency for procurement, distribution, and storage of foodgrains is the Food Corporation of India (FCI). Procurement at MSP is open-ended, while distribution is governed by the scale of allocation and its offtake by beneficiaries. The offtake of foodgrains is primarily under the targeted public distribution system (TPDS) and other welfare schemes of the GoI.

Procurement and Offtake of Foodgrains

8.46 Due to good production of foodgrains in recent years and remunerative MSPs, along with various other steps taken by the government, the procurement of wheat and rice has steadily risen and reached record levels (Table 8.8). Besides Punjab and Haryana, contribution from States such as Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh in procurement of wheat was much higher compared to last season. In procurement of rice, non-traditional States like Bihar, Chhatisgarh, Uttar Pradesh and West Bengal showed significant increase over last year.

Decentralized Procurement Scheme

8.47 A number of states have opted for implementation of the Decentralized Procurement Scheme (DCP) introduced in 1997, under which foodgrains are procured and distributed by state governments themselves. Under this scheme, the designated states procure, store, and issue foodgrains under the TPDS and welfare schemes of the GoI. The difference between the economic cost fixed for the state and the CIP is passed on to the state government as subsidy. The decentralized system of procurement has the objectives of covering more farmers under MSP operations, improving efficiency of the PDS, providing foodgrains varieties suited to local tastes, and reducing transportation costs.

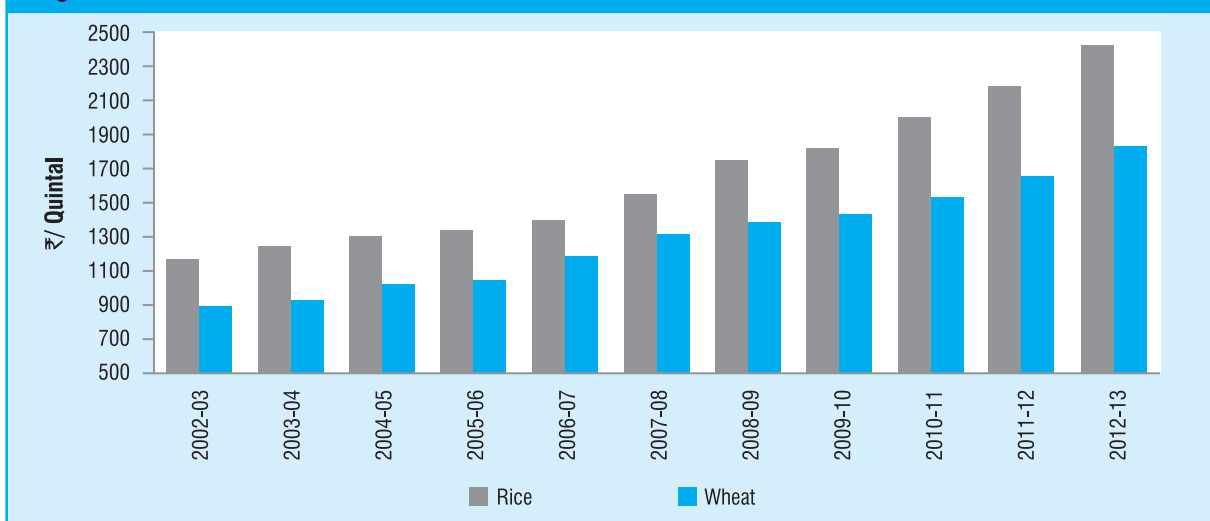
Economic Cost of Foodgrains to the FCI

8.48 The economic cost of foodgrains consists of the MSP (and bonus if applicable) as the price paid to farmers, procurement incidentals, and the cost of distribution. The economic cost for both wheat and rice has witnessed significant increase during the last few years thanks to increase in MSPs and procurement incidentals (Figure 8.7).

Food Subsidy

8.49 Provision of minimum nutritional support to the poor through subsidized foodgrains and ensuring price stability are the objectives of the food security system. In fulfilling its obligation towards distributive justice, the government incurs food subsidy. While the economic cost of wheat and rice has continuously

Figure 8.7 : Economic Cost of Rice and Wheat



gone up, the issue price has been kept unchanged since 1 July 2002. The government therefore continues to provide large and growing amounts of subsidy on foodgrains for distribution under the TPDS, other nutrition-based welfare schemes, and open market operations. The food subsidy bill is substantial, putting huge stress on the fiscal side (Figure 8.8).

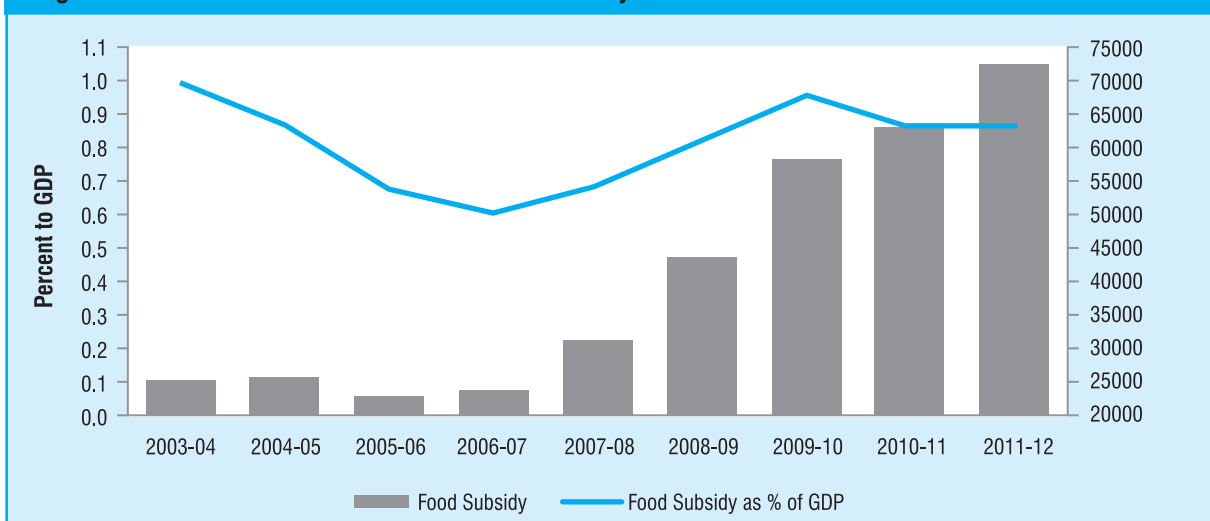
Allocation of Foodgrains under the TPDS and Other Welfare Schemes

8.50 Allocations for Antyodaya Anna Yojana (AAY) and below poverty line (BPL) families are being made at 35 kg per family per month. For above poverty line (APL) families, allocation varies from 15 kg to 35 kg in different states. During 2012-13, the

following allocations have so far been made (upto 6-2-2013):

- Normal TPDS allocation made is 499.42 lakh tonnes covering AAY, BPL, and APL families.
- Additional allocations of 78.98 lakh tonnes of rice and wheat have also so far been made. These include (i) 50 lakh tonnes to BPL families made in July 2012, (ii) 21.21 lakh tonnes to poorest districts and (iii) 7.77 lakh tonnes of rice and wheat for festivals, calamity relief, etc.
- 49.26 lakh tonnes of rice and wheat has been allocated for other welfare schemes such as the Mid-day Meal Scheme, Wheat Based Nutrition Programme under the Integrated Child Development Service, and Annapurna.

Figure 8.8 : Quantum of food subsidies released by Government



- Total release of foodgrains during the current year so far has been 627.67 lakh tonnes.

Open Market Sale Scheme (Domestic)

8.51 The FCI on behalf of the GoI has been undertaking sale of wheat and rice at predetermined prices/reserve prices in the open market from time to time to enhance market supply of foodgrains to have a moderating influence on open market prices and to offload surplus stocks. Under the Open Market Sale Scheme (Domestic) (OMSS[D]), 95 lakh tonnes of wheat has been allocated for tender sale to bulk consumers and sale to small private traders since July 2012 for the period up to February 2013. Under the OMSS retail scheme, 5 lakh tonnes of wheat and 5 lakh tonnes of rice have been allocated for sale to states/UTs/cooperatives for the period up to March 2013.

Storage Capacity in the Country

8.52 Storage capacity including both covered and cover and plinth (CAP), available with state agencies for storage of central stock foodgrains, has increased from 291.32 lakh tonnes as on 31 March 2012 to 341.35 lakh tonnes as on 31 December 2012. However, to meet the requirement of all-time high stock levels of 823.17 lakh tonnes achieved this year, the FCI resorted to short-term hiring to efficiently manage the stocks. In order to incentivizing the creation of storage capacity in the country, the government initiated the Private Entrepreneurs Guarantee (PEG) Scheme that aims to construct storage godowns through private entrepreneurs, the Central Warehousing Corporation (CWC), and State Warehousing Corporations (SWC). Under the PEG Scheme, the FCI guarantees 10-year usage of storage capacities to private investors and nine years to the CWC and SWCs. Construction of godowns in 19 states with a total capacity of 197 lakh tonnes has been approved out of which a capacity of 132.73 lakh tonnes has been sanctioned for construction. These measures are expected to address the shortage of covered godown space to a great extent.

Agricultural Exports

8.53 As per World Trade Organization (WTO) International Trade Statistics, 2012 (based on trade in 2011), global export and import of agricultural and food products is US\$ 1.66 trillion and US\$ 1.82 trillion respectively. India's share in this is 2.07 per cent and 1.24 per cent respectively. India has improved

its position in agricultural and food exports to 10th globally. Exports of agriculture and allied products during 2011-12 accounted for 9.08 per cent of India's total exports against 6.9 per cent during 2010-11. In recent years, the policy impetus by the government has provided much required stability to agri exports. Given sufficient stocks of foodgrains in the central pool, the government has allowed exports of 4.5million tonnes of wheat from the central pool stock of the FCI through central public-sector undertakings and placed export of wheat and rice under open general licence (OGL). Permission to export wheat products up to 6.50 lakh tonnes through customs Electronic Data Interchange ports on private account has also been extended up to 31 March 2013. Though these measures are in the right direction, a consistent long-term trade policy with tariff in a narrow band may be required for India to acquire international presence in commodities wherein it has comparative advantage.

The National Food Security Bill

8.54 In order to address the issue of food security in a comprehensive manner, the Government introduced National Food Security Bill in the Lok Sabha on 22 December, 2011. The Bill, inter alia, envisages coverage of 75% of the rural and 50% of the urban population for subsidised foodgrains under the Targeted Public Distribution System, besides provisions for nutritional support to women and children. After its introduction, the Bill was referred to the Parliamentary Standing Committee on Food, Consumer Affairs and Public Distribution for examination. The Committee held wide ranging consultations with Central Ministries/Departments, various other organizations and individuals and also visited States/UTs to obtain their views/suggestions on the Bill. The Standing Committee has submitted its report to the Speaker, Lok Sabha on 17th January, 2013, which is being processed in consultation with concerned Central Ministries/Departments and States/UTs. The Government is committed to early enactment of this historic legislation.

COMMODITY FUTURES MARKET

8.55 The commodity futures market facilitates the price discovery process and provides a platform for price-risk management in commodities. Currently 113 commodities are notified for futures trading of which 51 are actively traded in five national and 16 regional commodity-specific exchanges. The year

Table 8.9 : Trade in Commodity Futures Market

(Volume of trading in lakh tonnes, value ₹ in crore)

Commodity	2011-11		2011-12		2012-13 (Up to 30-11-12)	
	Volume	Value	Volume	Value	Volume	Value
Agricultural commodities	4168 (32.6)	1456390 (12.2)	4942 (35.24)	2196150 (12.12)	3113 (30.77)	1536268 (13.21)
Bullion	7.38 (0.05)	5493892 (46.0)	10.27 (0.07)	10181957 (56.17)	5.02 (0.05)	5363816 (46.13)
Metals	1410 (11.0)	2687673 (22.5)	1388 (9.9)	2896721 (15.98)	1046 (10.33)	2157139 (18.55)
Energy	7220 (56.4)	2310959 (19.3)	7686 (54.8)	2851270 (15.73)	5954 (58.85)	2569619 (22.1)
Others		29.04		6.45		1.28
Total	12806	11948942	14026	18126104	10119	11626842

Source : Department of Consumer Affairs.

Note : Volume of certified emission reduction (CER), electricity, heating oil and gasoline not included in the total volumes of other commodities.

Figures in brackets are the percentage to the total volume and value of trade of the respective group.

2012-13 witnessed a decline in the total value of trade compared to the corresponding period of the preceding year (Table 8.9).

CHALLENGES AND OUTLOOK

8.56 Foodgrains production in India has shown remarkable improvement in recent years. The production of food-grains in 2011-12 was at a record high of 259.32 million tonnes. This achievement comes at a time when it is generally recognized that inadequate attention to agriculture across many parts of the world led to food shortages and steep hikes in food prices. In comparison, Indian agriculture has performed well primarily due to timely policy interventions. Nevertheless, the average annual growth rate of 3.6 per cent during the Eleventh Five Year Plan for the agriculture & allied sector fell short of the target of 4 per cent. Moreover the country faces the stiff challenge of feeding its growing population. There are a number of constraints and challenges that need to be addressed and the country will have to invest heavily in farm research, rural infrastructure, providing better access to high value markets, better credit facilities and input use, so that the farming community as a whole is motivated to produce more and the target of 4 per cent growth set for the agriculture and allied sector in the Twelfth Five Year Plan is met.

8.57 Though India is one of the leading producers in the world of many major crops like paddy, wheat, pulses, sugarcane, spices, and plantation crops, the

comparison in terms of yield levels is not creditable with it achieving a much lower rank in many of these crops. Further, studies indicate that there are wide yield gaps among various crops across the country. Agriculture production can be substantially increased if we address this yield gap by adopting technological and policy interventions. Improvement in yields holds the key for India to remain self-sufficient in foodgrains and also make a place for itself in many agricultural crops and products in the international market.

8.58 Another challenge is how to maximize agricultural income while adopting a more sustainable agricultural strategy. The concerns here are land and water degradation due to soil erosion, soil salinity, water logging, and excessive application of nutrients. There are concerns arising also from over-exploitation of water resources, especially in the Green Revolution belt. Better management practices for rehabilitation of degraded land and water resources hold the key. Measures must be taken to promote use of quality seeds, cultivation of drought-resistant varieties of crops, judicious use of available water, balanced use of fertilizers, farm mechanization to improve efficiency levels, and wider use of irrigation facilities. Expenditure on agricultural research also needs to be stepped up substantially.

8.59 Climate change and extreme weather events with greater intensity and frequency can have serious implications for our agriculture sector and create greater instability in food production and thereby farmers' livelihood. The current crop insurance

system also needs to be further refined in order to cater to the unavoidable climatic conditions or pest epidemics.

8.60 Declining per capita availability of foodgrains has been a major concern in India. For ensuring nutritional security, it is not only important to increase per capita availability of foodgrains but also to ensure the right amounts of food items in the food basket of the common man. A thrust on horticulture products and protein-rich items is required for enhancing per capita availability of food items as well as ensuring nutritional security.

8.61 The pace of agricultural growth in the eastern and north-eastern regions has been slower than in the rest of the country. The good prospects of production in many crops in these parts of the country should quickly be taken advantage of in the years to come. Hence a strategy for agricultural development in eastern and north-eastern India comprising multiple livelihood opportunities, sustainable agricultural development through a farming systems approach, efficient national resources management, eco-regional technology missions, and rice-based farming systems needs to be put in place.

8.62 Another critical issue is supply chain management in agricultural marketing in India. Farmers' access to markets is hampered by poor roads, rudimentary market infrastructure, and excessive regulation. Many agricultural crops are perishable in nature and post-harvest handling issues and marketing problems affect the farm incomes. It is necessary that we evolve mechanisms for linking

wholesale processing, logistics and retailing with farm-production activities so as to generate enhanced efficiency, better farm prices, etc. The private sector should be allowed to operate in developing these market linkages for which suitable reforms will help. Recently the government allowed foreign direct investment (FDI) in retail, which has been supported by many farmer organizations as well, and it can pave the way for investment in new technology and marketing of agricultural produce in India.

8.63 There has been substantial increase in the MSPs of various crops over the last few years. Though considered necessary for incentivizing farmers, the MSP signals the floor price for the produce. There is a huge cost involved in the process, in the form of food subsidy. Further, this policy of stocking foodgrains well above the buffer norms comes under criticism on the grounds of hoarding and creating artificial shortages in the market, thereby jacking up the prices of essential commodities. Urgent attention needs to be accorded to efficient food stocks management, timely offloading of stocks, and a stable and predictable trade policy.

8.64 Strengthening agricultural statistics with reliable and timely availability of forecasts of agricultural crops is also an immediate need as the gaps in agricultural statistics will hamper agricultural development planning and policymaking.

8.65 With these and other improvements, it should be possible to sustain the 4 percent growth target set for agriculture and allied sectors in the Twelfth Five Year Plan.