

# Agriculture and Food Management

## 8

### CHAPTER

Good monsoon between 2005-06 and 2008-09 and the efforts of our farmers led to consistent increase in food production during the period and a record production of 233.88 million tonnes of foodgrains in 2008-09. Notwithstanding the fact that the south-west monsoon was the most deficient since 1972, by 23 per cent compared to the long period average (LPA), the overall agricultural gross domestic product (GDP) is estimated to have fallen by only 0.2 per cent in 2009-10 (advance estimates) as against the previous years growth rate of 1.6 per cent. Foodgrain area sown in kharif season declined by 6.5 per cent compared to last year and food production is expected to be short by 16 per cent compared to the fourth advance estimates of 2008-09. Rising food prices, spurred by expectations of shortfall in food production, have brought the issues of food security, food stocks management and need for improving food production and productivity to the forefront of national strategy.

8.2 Agriculture including crop and animal husbandry, fisheries, forestry and agro processing provides the underpinnings of our food and livelihood

security. Agriculture provides significant support for economic growth and social transformation of the country. As one of the world's largest agrarian

**Table 8.1 : Agriculture sector: Key indicators at constant prices (2004-05) in per cent**

Item	2007-08	2008-09
1 Growth in GDP in Agriculture & Allied Sectors	4.7	1.6
<i>Agriculture</i>	5.0	1.1
<i>Forestry and Logging</i>	2.2	2.9
<i>Fishing</i>	6.0	6.3
2 Share in GDP - Agriculture and Allied Sectors	16.4	15.7
<i>Agriculture</i>	13.9	13.2
<i>Forestry and Logging</i>	1.7	1.7
<i>Fishing</i>	0.8	0.8
3 Share of Agriculture & Allied Sectors in total GCF.	7.01	9.05
<i>Agriculture</i>	6.43	8.39
<i>Forestry and Logging</i>	0.07	0.09
<i>Fishing</i>	0.51	0.58
4 Share of Agricultural Imports in Total Imports at Current Prices	2.95	2.74
Share of Agricultural Exports in Total Exports at Current Prices	12.05	10.23
5 Employment in the agriculture Sector as Share of Total Employment in 2004-05 as per CDS		52.1

Source : Central Statistical Organization (CSO) and Department of Agriculture and Cooperation.

Notes : GCF—gross capital formation; CDS—current daily status.

economies, the agriculture sector (including allied activities) in India accounted for 15.7 per cent of the GDP (at constant 2004-05 prices), in 2008-09, compared to 18.9 per cent in 2004-05, and contributed approximately 10.2 per cent of total exports during 2008-09. Notwithstanding the fact that the share of this sector in the GDP has been declining over the years, its role remains critical as it provides employment to around 52 per cent of the workforce. The rates of growth and share of agriculture and allied activities in the GDP of the country are given in Table 8.1.

### GROSS CAPITAL FORMATION IN AGRICULTURE AND ALLIED SECTORS

8.3 The public investment in agriculture in real terms has witnessed steady decline from the Sixth Five Year Plan to the Tenth Plan. Trends in public investment in agriculture and allied sectors reveal

that it has consistently declined in real terms (at 1999-2000 prices) from the Sixth Plan to the Ninth Plan (Sixth Plan [1980-85]—Rs 64,012 crore, Seventh Plan [1985-90]—Rs 52,108 crore, Eighth Plan [1992-97]—Rs 45,565 crore and Ninth Plan [1997-2002]—Rs 42,226 crore). However, this trend was reversed in the Tenth Plan (2002-07) and public investment in agriculture registered an increase of Rs 25,034 crore and stood at Rs 67,260 crore, which is a positive and welcome trend. Investment in agriculture and allied sector since 2004-05 is given in Table 8.2.

8.4 The GCF in agriculture and allied sectors as a proportion of total GDP stood at 2.66 per cent in 2004-05 and improved to 3.34 per cent in 2008-09. Similarly, the GCF in agriculture & allied sectors relative to GDP in this sector has also shown an improvement from 14.07 per cent in 2004-05 to 21.31 per cent in 2008-09 (Table 8.3).

**Table 8.2 : Public and Private Investment in Agriculture & Allied Sector at 2004-05 Prices**

Year	Investment in agriculture & allied sectors (Rs crore)			Share in total investment (per cent)	
	Total	Public	Private	Public	Private
2004-05	78,848	161,83	62,665	20.5	79.5
2005-06	93,121	199,09	73,211	21.4	78.6
2006-07	94,400	22,978	71,422	24.3	75.7
2007-08	1,10,006	23,039	86,967	20.9	79.1
2008-09	1,38,597	24,452	1,14,145	17.6	82.4

Source : CSO.

**Table 8.3 : Gross capital formation in agriculture in Rs crore at 2004-05 prices**

Year	GDP	Agriculture & allied activities		GCF/GDP in agriculture & allied activities	GCF in agriculture as per cent of total
		GCF	GDP		
2004-05	29,67,599	78,848	5,60,308	14.07	2.66
2005-06	32,49,130	93,121	5,89,697	15.79	2.87
2006-07	35,64,627	94,400	6,11,409	15.44	2.65
2007-08	38,93,457	1,10,006	6,40,315	17.18	2.83
2008-09	41,54,973	1,38,597	6,50,461	21.31	3.34

Source : CSO.

Table 8.4 : Foodgrain production (million tonnes)

Crop	2007-08	2008-09			
	Final	Targets	Fourth advance estimates	Percentage increase (+) decrease(-) over final 2007-08	Percentage increase (+) decrease (-) vis-à-vis target for 2008-09
1 Rice	96.69	97.0	99.15	2.5	2.2
2 Wheat	78.57	78.5	80.58	2.6	2.6
3 Coarse Cereals	40.76	42.0	39.48	-3.1	-6.0
4 Cereals	216.02	217.5	219.21	1.5	0.8
5 Total Pulses	14.76	15.5	14.66	-0.7	-5.4
6 Total Foodgrains	230.78	233.0	233.88	1.3	0.4

Source : Department of Agriculture & Cooperation.

Table 8.5 : Production of commercial crops

Crop	Units	2007-08	2008-09			
		Final	Targets	Fourth advance estimates	Per cent increase over 2007-08	Per cent increase vis-a vis target
Total Nine Oilseeds	Lakh tonnes	297.55	317.50	281.57	-5.4	-11.3
Sugarcane	Lakh tonnes	3,481.88	3,400.00	2,739.31	-21.3	-19.4
Cotton #	Lakh bales	258.84	260.00	231.56	-10.5	-10.9
Jute & Mesta##	Lakh bales	112.11	110.00	104.07	-7.2	-5.4

Source : Department of Agriculture & Cooperation. # bales of 170 kgs each ## bales of 180 kgs.

## CROP PRODUCTION 2008-09

8.5 For three consecutive years, from 2005-06 to 2008-09 (fourth advance estimates), foodgrains production recorded an average annual increase of over 8 million tonnes. Total foodgrains production in 2008-09 was estimated at 233.88 million tonnes as against 230.78 million tonnes in 2007-08 (Table 8.4). However, the production of major commercial crops (oilseeds, sugarcane, cotton, jute and mesta) declined in 2008-09 compared to 2007-08 levels (Table 8.5)

## CROP PRODUCTION 2009-10

8.6 Deficiency in rainfall in the south-west monsoon season during 2009, particularly in July and August, severely affected kharif crops, especially paddy. The recovery of monsoon in September and post-monsoon (October-December) cumulative rainfall of 8 per cent above normal protected the kharif crops to some extent and improved the prospects of rabi crops in 2009-10. As per the first advance

estimates (kharif only) for 2009-10, production of foodgrains is estimated at 98.83 million tonnes which is lower than the target of 125.15 million tonnes set for the year as also lower than the fourth advance estimates (kharif only) of 117.70 million tonnes for 2008-09.

### Rice

8.7 As per the first advance estimates, the production of kharif rice is at 71.65 million tonnes in 2009-10, a decrease of about 15 per cent over 2008-09 levels and 17 per cent over the target for 2009-10.

### Coarse Cereals

8.8 Total kharif production of coarse cereals in 2009-10 is expected to decline to 22.76 million tonnes against 28.34 million tonnes in 2008-09 and a target of 32.65 million tonnes for kharif 2009-10.

### Cereals

8.9 The overall production of kharif cereals in 2009-10 is expected to decline by 18.51 million tonnes over 2008-09.

## Pulses

8.10 Total production of kharif pulses is estimated at 4.42 million tonnes in 2009-10, which is 8 per cent lower than the production during 2008-09 and 32 per cent lower than the targeted production for 2009-10.

## Oilseeds

8.11 Total kharif production of the nine oilseeds is estimated at 152.33 lakh tonnes in 2009-10, which is about 15 per cent lower than the kharif production in 2008-09.

## Sugarcane

8.12 Sugarcane production in 2009-10 is estimated at 249.48 million tonnes, which is lower than the production of 273.93 million tonnes during 2008-09. This represents a decline of 9 per cent over the previous year and 27 per cent vis-à-vis the targeted production for 2009-10.

## Cotton

8.13 Cotton production in 2009-10 is estimated at 236.57 lakh bales (of 170 kg each), which is higher than the fourth advance estimates of 231.56 lakh bales in 2008-09 by 2.2 per cent.

## Jute and Mesta

8.14 The production of jute and mesta is estimated at 102.43 lakh bales (of 180 kg each) in 2009-10. This is lower than the targeted production of 112.00 lakh bales and also lower than the 104.07 lakh bales produced in 2008-09.

## GROWTH RATES OF AREA, PRODUCTION AND YIELD

8.15 Growth in production of agricultural crops depends upon acreage and yield. Limitations of expansion in agricultural land suggest multiple cropping as a means to increase the gross cropped area. It is clear that the main source of long-term output growth can only be improvement in yields. Trends in indices of area, production and yield of different crops till 2008-09 (Base triennium ending 1981-82=100) are given in Table 8.6. Trends in area and production are given in Figure 8.1.

## Rice

8.16 The compound growth index of rice yield has shown a growth of 1.9 per cent per annum during 2001-08 compared to the 1990s leading to an

**Table 8.6 : Compound growth rates of area, production and yield**

(as % per annum with Base T.E 1981-82=100)

Growth rates	1949-50 to 1964-65	1967-68 to 2008-09*
<b>Rice</b>		
Area	1.21	0.50
Production	3.50	2.46
Yield	2.25	1.99
<b>Wheat</b>		
Area	2.69	1.20
Production	3.98	3.69
Yield	1.27	2.46
<b>Coarse Cereals</b>		
Area	0.90	-1.41
Production	2.25	0.67
Yield	1.23	1.99
<b>Pulses</b>		
Area	1.72	0.01
Production	1.41	0.75
Yield	-0.18	0.72
<b>Sugarcane</b>		
Area	3.28	1.69
Production	4.26	2.64
Yield	0.95	0.94
<b>Cotton</b>		
Area	2.47	0.42
Production	4.55	3.06
Yield	2.04	2.63
<b>Nine Oilseeds</b>		
Area	2.53	1.44
Production	3.12	3.16
Yield	0.00	1.69

Source : Department of Agriculture & Co-operation.  
Note: \*Growth rates are based on fourth advance estimates for 2008-09.

increase in growth in production. However, the index of area under rice shows negative growth during the above period.

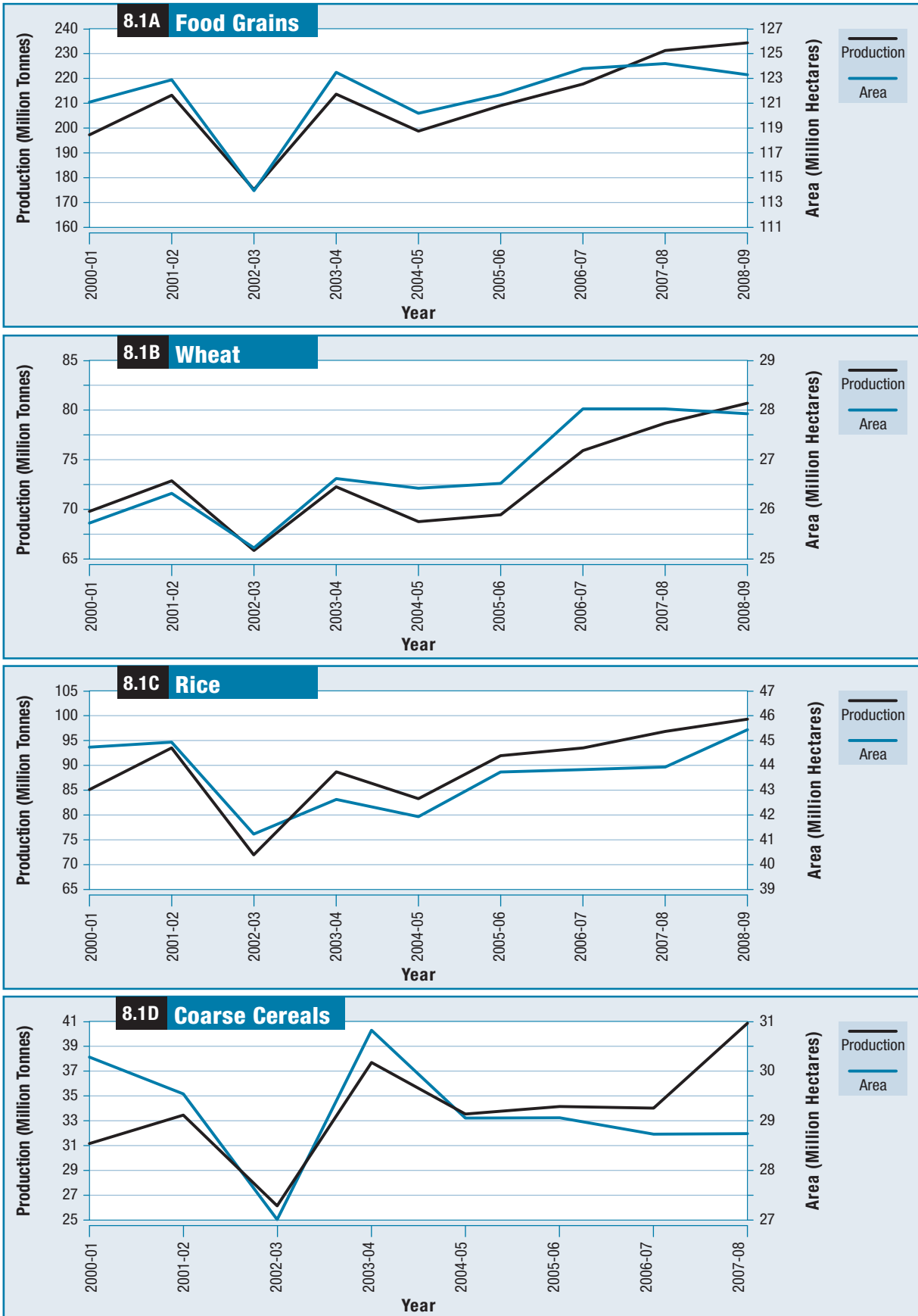
## Wheat

8.17 The area under wheat that was around 25 million ha in 2002-03 increased to 26.4 million ha in 2005-06 and further to 28 million ha in 2008-09. The compound growth indices of area, production and yield during 1991-2000 and 2001-08 have shown perceptible decline.

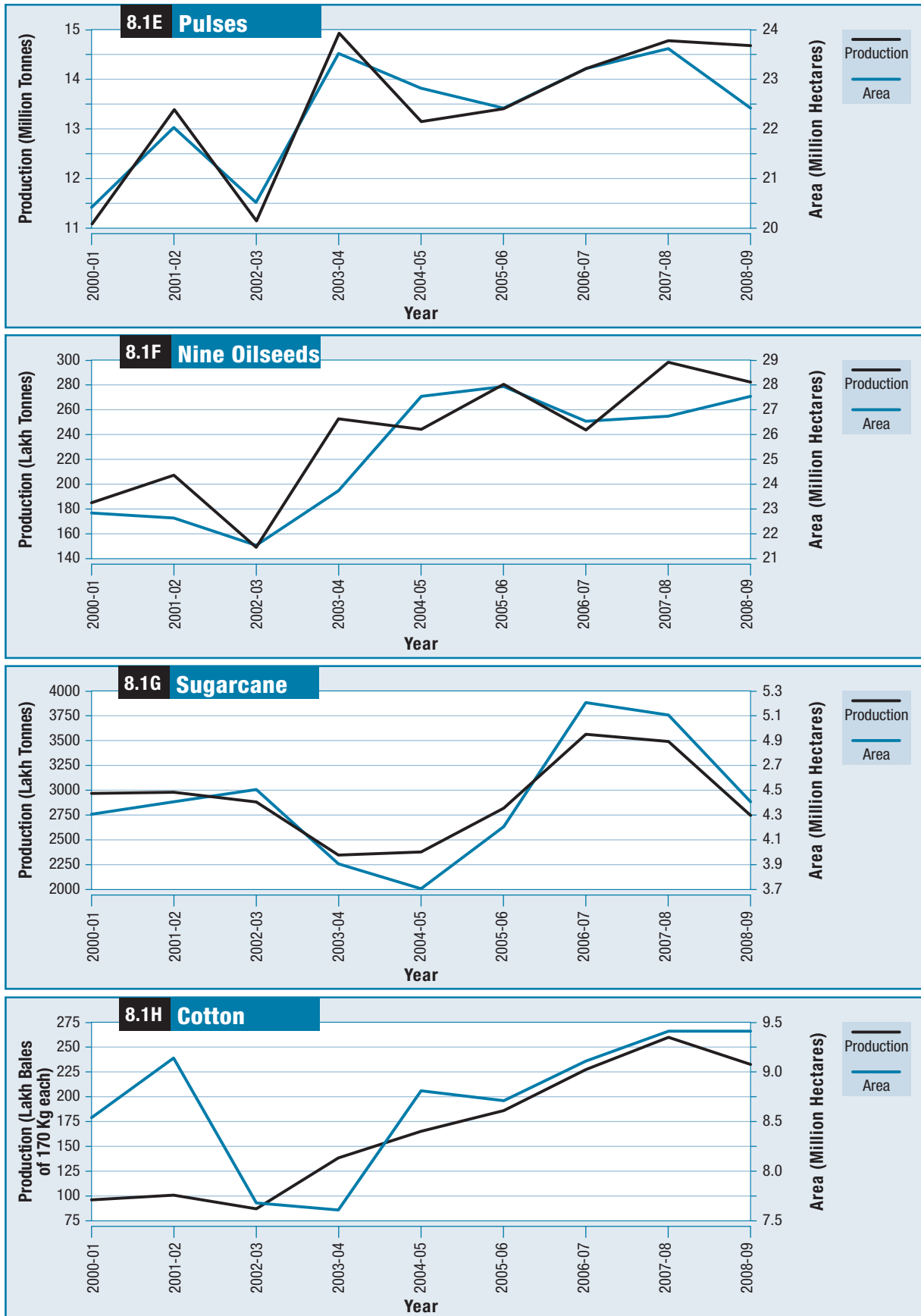
## Coarse Cereals

8.18 Growth in index of area during 2001-08 improved compared to the 1990s. The growth index

**Figure 8.1 Area and production of principal crops**



**Figure 8.1 Area and production of principal crops**



of yield increased significantly, leading to an increase in growth in production.

## Pulses

8.19 Gram and tur are the major contributors to total pulses production in the country. During 2000-01 to 2008-09, there has been improvement in the growth indices of area and yield in tur and index of area in gram resulting in increase in the growth of production.

## Sugarcane

8.20 The compound growth rate index of area under sugarcane increased significantly during 2001-08. However, the growth index of yield moderated but remained positive.

## Cotton

8.21 The yield of cotton went up from 307 kg/ha in 2003-04 to 419 kg/ha in 2008-09 (fourth advance estimates). The compound growth rate index of yield increased significantly from - 0.41 per cent during the 1990s to 13.64 per cent during 2001 to 2008. However, the growth in index of area moderated but remained positive. The combined effect on the index of production was an increase in growth from 2.29 per cent during the 1990s to 15.48 per cent during 2001-08.

## Oilseeds

8.22 The growth in indices of yield and area under oilseeds has shown perceptible improvement during 2001-08 compared to the 1990s.

## AREA COVERAGE 2009-10

8.23 The area coverage of 667.84 lakh ha under total foodgrains during kharif 2009-10 compared to 714.02 lakh ha during kharif 2008-09 shows a decline of 46.18 lakh ha. The area coverage under kharif rice during 2009-10 is around 361.62 lakh ha, which is 44.85 lakh ha less than the 406.47 lakh ha during kharif 2008-09. The area coverage under oilseeds during kharif 2009-10 is 175.19 lakh hectares, which is lower by 9.49 lakh ha than kharif 2008-09. The area coverage under sugarcane during the current year is 41.78 lakh ha, which is also lower by about 2.18 lakh ha than that in the previous year.

## AGRICULTURAL INPUTS

8.24 Improvement in yield, which is key to long-term growth, depends on a host of factors including technology, use of quality seeds, fertilizers,

pesticides, micronutrients and irrigation. Each of these plays a role in determining yield level and in turn augmentation in the level of production.

## Seeds

8.25 Seeds, which are considered the carriers of new technology for crop production and higher crop yields, are a critical input for sustained growth of agriculture. In India more than four-fifths of the farmers rely on farm-saved seeds leading to a low seed replacement rate. The Indian Seed Programme includes the participation of Central and State Governments, the Indian Council of Agricultural Research (ICAR), State Agricultural Universities, the cooperative and private sectors. There are 15 State Seed Corporations besides two national-level corporations, namely National Seeds Corporation and State Farms Corporation of India. Year-wise details of production of breeder and foundation seeds and distribution of certified seeds are given in Table 8.7.

**Table 8.7 : Production of breeder and foundation seeds and distribution of certified seed**

Year	Production of breeder seeds (quintals)	Production of foundation seeds (lakh quintals)	Distribution of certified/ quality seeds (lakh quintals)
2004-05	66,460	6.9	113.10
2005-06	68,654	7.4	126.74
2006-07	73,829	7.96	155.01
2007-08	91,960	8.22	179.05
2008-09	1,00,000 (Anticipated)	9.69 (Anticipated)	190.00 (Anticipated)

Source : Department of Agriculture & Cooperation.

8.26 The Ministry of Agriculture is implementing the Central-sector Development and Strengthening of Infrastructure Facilities for Production and Distribution of Quality Seeds scheme. The aim of the scheme is to make quality seeds of various crops available to farmers timely and at affordable price. Under this scheme, the seed component of the Prime Minister's Relief Package is being implemented in 31 suicide-affected districts of Maharashtra, Andhra Pradesh, Karnataka and Kerala, to supply certified seeds at 50 per cent of seed cost. During the year 2008-09, Rs 445.81 crore was released under the Prime Minister's Relief

Package. The scheme is being implemented on all - India basis from the year 2005-06. The major thrusts under the scheme are on improving quality of farm-saved seeds through Seed Village Programmes to enhance seed replacement rate, boosting seed production in the private sector and helping public-sector seed companies to contribute to enhancing seed production. Some of the remarkable achievements under the scheme during 2008-09 were that more than 25,000 seed villages were organized across the country; certified/quality seed production increased from 194.31 lakh quintals during 2006-07 to 250.35 lakh quintals during 2008-09; 52 seed infrastructure development proposals were sanctioned for boosting seed production in the private sector; and financial sanctions were given for establishing tissue culture facilities in Orissa (banana) and Maharashtra (pomegranate). Further, Biotech Consortium of India Limited (BCIL) was engaged as an expert agency to undertake public awareness programmes in nine BT cotton- growing States at State capital, district and tehsil levels. The BCIL has been provided financial assistance of Rs 26.65 lakh during the year 2008-09.

8.27 The Protection of Plant Varieties and Farmers' Rights (PPV&FR) Authority, established in November 2005 at the National Agricultural Science Complex (NASC), New Delhi, has been mandated to implement provisions of the PPV&FR Act 2001. Fourteen crops, namely rice, wheat, maize, sorghum, pearl millet, chick pea, pigeon pea, green gram, black gram, lentil, field pea, kidney bean, cotton and jute were notified for the purpose of registration under the Act. There are plans to extend its operations and coverage to forestry and aromatic and medicinal plants.

8.28 Considering the vital importance of the seeds sector in promoting agricultural growth, it is proposed to replace the existing Seeds Act 1966 by suitable legislation. The new Act is expected to (i) create a facilitative climate for growth of the seed industry, (ii) enhance seed replacement rates for various crops, (iii) boost the export of seeds and encourage import of useful germ plasm and (iv) create a conducive atmosphere for application of frontier sciences in varietal development and for enhanced investment in research and development (R&D). The Seeds Bill was introduced in the Rajya Sabha in 2004. It was referred to the Parliamentary Standing Committee on Agriculture which recommended several modifications in 2008. These would be taken up for consideration by Parliament.

## Fertilizers

8.29 Chemical fertilizers have played a significant role in the development of the agricultural sector. The per hectare consumption of fertilizers in nutrients terms increased from 105.5 kg in 2005-06 to 128.6 kg in 2008-09. However, improving the marginal productivity of soil still remains a challenge. This requires increased NPK application and application of proper nutrients, based on soil analysis. Fertilizer consumption for the last five years is given in Table 8.8.

8.30 The Government has taken a number of measures to improve fertilizer application in the country. A new scheme, the National Project on Management of Soil Health & Fertility (NPMSF), has been introduced in 2008-09 with a view to setting up of 500 new Soil Testing Laboratories (STLs) and 250 Mobile Soil Testing Laboratories (MSTLs) and strengthening of the existing State STLs for micronutrient analysis. In order to ensure adequate availability of fertilizers of standard quality to farmers and to regulate trade, quality and distribution in the country, fertilizers have been declared an essential commodity as per the Fertilizer Control Order (FCO) 1985 promulgated under Section 3 of the Essential Commodity Act 1955. The procedure for incorporation of new products has been liberalized and simplified to encourage manufacture and use of fortified fertilizers. Eight fertilizers have been specified as fortified fertilizers in FCO 1985. To encourage balanced use of fertilizers, a new concept of customized fertilizers has been introduced. These fertilizers are soil specific and crop specific. Organic fertilizers, namely city-based compost and vermin compost, and bio-fertilizers, namely rhizobium, azotobacter, azospirillum and phosphate solubilizing bacteria, have been recognized and incorporated in FCO 1985.

**Table 8.8 : Fertilizer consumption in nutrient terms during 2005-06 to 2009-10**

Product	(in lakh tonnes)				
	2005-06	2006-07	2007-08	2008-09	2009-10 (only kharif*)
Nitrogenous (N)	127.23	137.73	144.19	150.90	74.86
Phosphatic (P)	52.04	55.43	55.15	65.06	41.32
Potassic (K)	24.13	23.35	26.36	33.13	16.07
Total (N+P+K)	203.40	216.51	225.70	249.09	132.25
Per ha Consumption (kg)	105.5	111.80	116.80	128.6	-

Source : Department of Fertilizers.

Note : \*Estimated

## Irrigation

8.31 Irrigation is one of the most important critical inputs for enhancing the productivity that is required at different critical stages of plant growth of various crops for optimum production. The Government of India has taken up irrigation potential creation through public funding and is assisting farmers to create potential on their own farms. Substantial irrigation potential has been created through major and medium irrigation schemes. The total irrigation potential in the country has increased from 81.1 million ha in 1991-92 to 102.77 million ha by March 2007.

8.32 The Central Government initiated the Accelerated Irrigation Benefit Programme (AIBP) from 1996-97 for extending assistance for the completion of incomplete irrigation schemes. Under this programme, projects approved by the Planning Commission are eligible for assistance. Further, the assistance, which was entirely a loan from the Centre in the beginning, was modified by inclusion of a grant component with effect from 2004-05. AIBP guidelines were further modified in December 2006 to provide enhanced assistance at 90 per cent of the project cost as grant to special category States, Drought Prone Area Programme (DPAP) States/tribal areas/flood-prone areas and Koraput-Balangir-Kalahandi (KBK) districts of Orissa. Under the AIBP, Rs 34,783.7823 crore of Central Loan Assistance (CLA)/grant has been released up to March 31, 2009. An additional irrigation potential of 54.858 lakh ha has been created under the AIBP up to March 2009. As on March 31, 2009, 268 projects have been covered under the AIBP and 109 completed.

## RAINFALL AND RESERVOIR STORAGE

### Rainfall

8.33 Rainfall greatly influences crop production and productivity in a substantial way. More than 75 per

cent of annual rainfall is received during the south-west monsoon season (June-September). During winter (January-February) of 2009, the country as a whole received 46 per cent less rainfall than the LPA. In the pre-monsoon period of 2009 (March-May), rainfall was 32 per cent below the LPA. During the south-west monsoon season of 2009, the country as a whole received 23 per cent less rainfall than the LPA. Central India, north-east India, north-west India and the southern peninsula experienced 20 per cent, 27 per cent, 36 per cent and 4 per cent deficient rainfall respectively. At district level, 9 per cent of districts received excess rainfall, 32 per cent normal rainfall, 51 per cent deficient rainfall and 8 per cent scanty rainfall. South-west monsoon (June-September, 2009) rainfall for the country as a whole and the four broad geographical regions is given in Table 8.9.

8.34 Out of 36 subdivisions, 23 recorded deficient rainfall during the south-west monsoon in 2009. Out of the remaining 13 subdivisions, only three recorded excess rainfall and the remaining 10 normal rainfall. Out of 526 meteorological districts for which data are available, 215 (41 per cent) received excess/normal rainfall and the remaining 311 (59 per cent) received deficient/scanty rainfall during the season (Table 8.10).

8.35 During the post-monsoon season (October-December) of 2009, the country as a whole has received 8 per cent above normal rainfall.

### Reservoir storage status

8.36 The total designed storage capacity at full reservoir level (FRL) of 81 major reservoirs in the country monitored by the Central Water Commission (CWC) is 151.77 billion cubic metres (BCM). At the end of monsoon 2009, the total water availability in these reservoirs was 90.48 BCM which is less than the water availability of 113.74 BCM at the end of

**Table 8.9 : South-west monsoon season (June to September 2009) rainfall**

Region	Actual (mm)	LPA(mm)	Actual per cent of LPA	Coefficient of variation(CV) per cent of LPA
All-India	689.9	892.5	77	10
North-west India	392.1	611.7	64	19
Central India	795.4	995.1	80	14
Southern Peninsula	692.9	722.5	96	15
North-east India	1,037.7	1,427.3	73	8

Source: Indian Meteorological Department.

**Table 8.10 : Monsoon performance 2001 to 2009 (June – September)**

Year	Number of meteorological subdivisions			Percentage of districts with normal/excess rainfall	Percentage of LPA rainfall for the country as a whole
	Normal	Excess	Deficient/scanty		
2001	29	1	5	67	92
2002	14	1	21	39	81
2003	26	7	3	77	102
2004	23	0	13	56	86
2005	23	9	4	72	99
2006	20	6	10	60	99
2007	17	13	6	72	105
2008	30	2	4	76	98
2009	10	3	23	41	77

Source : India Meteorological Department.

Note: Excess= +20 per cent or more of LPA; Normal=+19 per cent to -19 per cent of LPA; Deficient= -20 per cent to -59 per cent of LPA; Scanty= -60 per cent to -99 per cent of LPA.

**Table 8.11 : Reservoir storage (at the end of the monsoon season)**

Item	2009		2008		Average of last 10 years	
	Storage in BCM	% of FRL	Storage in BCM	% of FRL	Storage in BCM	% of FRL
At the beginning of the monsoon season (as on June 4, 2009)	17.50	12	29.24	19	21.02	14
At the end of the monsoon season (as on October 1, 2009)	90.48	60	113.74	75	100.95	67
Increase in Storage	72.98	48	84.50	56	79.93	53

Source : Central Water Commission

the monsoon in 2008 and the 100.95 BCM which is the average of the last 10 years (Table 8.11).

## PRICE POLICY FOR AGRICULTURAL PRODUCE

8.37 The Government's price policy for agricultural commodities seeks to ensure remunerative prices to the growers for their produce with a view to encouraging higher investment and production, and to safeguard the interests of consumers by making supplies available 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. Towards this end, the Government announces minimum support prices (MSPs) each season for major agricultural commodities and organizes purchase operations through public and cooperative agencies. The designated Central nodal agencies intervene in the market to undertake

procurement operations with the objective of ensuring that market prices do not fall below the MSPs fixed by the Government.

8.38 The Government decides the support prices for various agricultural commodities after taking into account the recommendations of the Commission for Agricultural Costs and Prices (CACP), the views of State Governments and Central Ministries as well as such other relevant factors as considered important for fixation of support prices. The Government has fixed the MSPs of 2009-10 kharif and rabi crops. The MSPs for paddy (common) and paddy (Grade A) have been raised by Rs 100 per quintal and fixed at Rs 950 per quintal and Rs 980 per quintal respectively. An incentive bonus of Rs 50 per quintal is also payable over and above the MSP of paddy. The MSP of arhar (tur) has been raised over the 2008-09 level by Rs 300 per quintal and fixed at Rs 2,300 per quintal while that of moong

Table 8.12 : Minimum support prices

(Rs. per quintal)

Commodity	MSP 2009-10 (crop year)	Commodity	MSP 2009-10 (crop year)
Kharif crops		Rabi crops	
Paddy (common)	950 + Rs. 50 per quintal bonus	Wheat	1,100
Paddy (Gr.A)	980 + Rs. 50 per quintal bonus	Gram	1,760
Jowar (Malindi)	860	Masur (lentil)	1,870
Maize	840	Rapeseed/mustard	1,830
Arhar (Tur)	2,300	Barley	750
Moong	2,760	<b>Other crops</b>	
Cotton (F-414/H-777/J34)	2,500 <sup>a</sup>	Sugarcane	129.84 <sup>b</sup>
Groundnut in shell	2,100		

Source: Department of Agriculture &amp; Cooperation.

Notes: <sup>a</sup> staple length (mm) of 24.5-25.5 and Micronaire value of 4.3-5.1;<sup>b</sup> Fair and Remunerative Price.

has been raised by Rs 240 per quintal and fixed at Rs 2,760 per quintal. The MSP of sesamum has been fixed at Rs 2,850 per quintal, raising it by Rs 100 per quintal. The MSPs of other kharif crops have been retained at their 2008-09 levels. The MSP of wheat has been raised to Rs 1,100 per quintal from Rs 1,080 per quintal and of barley to Rs 750 per quintal from Rs 680 per quintal. The MSPs of gram and safflower have been raised by Rs 30 per quintal each. The MSPs of masur and rapeseed/mustard have been retained at their previous year's levels of Rs 1,870 per quintal and Rs 1,830 per quintal respectively (Table 8.12).

### Price Support Scheme (PSS)

8.39 The Department of Agriculture & Cooperation is implementing the Price Support Scheme (PSS) for procurement of oilseeds and pulses through the

National Agricultural Cooperative Marketing Federation of India Limited (NAFED), which is the Central nodal agency, at the MSP declared by the Government. NAFED is also the Central agency for procurement of cotton under the PSS in addition to the Cotton Corporation of India (CCI). NAFED undertakes procurement of oilseeds, pulses and cotton under the PSS as and when prices fall below the MSP. Procurement under the PSS is continued till prices stabilize at or above the MSP

8.40 During 2009-10 (up to January 4, 2010) NAFED has procured 64,802 metric tonnes of various oilseeds costing Rs 278.07 crore under the PSS (Table 8.13).

### Market Intervention Scheme (MIS)

8.41 The Department of Agriculture & Cooperation implements the MIS on the request of State/Union

Table 8.13 : Procurement made by NAFED under the PSS during 2009-10

(up to January 4, 2010)

Sl. No.	Commodity	Crop season	MSP (Rs per quintal)	Quantity procured (in metric tonnes)	Value (in Rs lakh)
1.	Ball Copra	Season -2009	4,700	1,250	638.38
2.	Milling Copra	Season -2009	4,450	47,916	23,200.92
3.	AP Copra	Season -2009	3,900	510	219.30
4.	Cotton	Kharif-2009-10	2,850 & 3,000	1,408	405.37
5.	Sunflower Seed	Kharif -2009-10	2,215	13,718	3,343.08
<b>TOTAL</b>				<b>64,802</b>	<b>27,807.05</b>

Source: Department of Agriculture &amp; Cooperation.

Territory (UT) Governments for procurement of agricultural and horticultural commodities that are generally perishable in nature and not covered under the PSS. The MIS is implemented in order to protect the growers of these commodities from having to make distress sales. In the event of a bumper crop and glut in the market, prices tend to fall below economic levels/cost of production. Procurement under the MIS is made by NAFED as the Central agency and by State-designated agencies.

8.42 During 2009-10, the rates of most of the horticultural crops ruled to the benefit of growers. Thus only a couple of proposals were received, one from the Government of Karnataka for procurement of arecanut and another from the Government of Mizoram for procurement of passion fruit.

## PROGRESS OF AGRICULTURE-SECTOR SCHEMES/PROGRAMMES

8.43 Agriculture being a state subject, State Governments have an important role and responsibility for increasing agriculture production, enhancing productivity and exploring the vast untapped potential of the sector. Simultaneously, the Central Government must supplement the efforts of State Governments and a number of Centrally sponsored and Central-sector schemes are being implemented for the enhancement of agricultural production and productivity in the country, and to increase the income of the farming community.

### (i) Macro Management

8.44 The Macro Management of Agriculture Scheme (MMA) was formulated in 2000-01, by bringing together under one umbrella 27 Centrally sponsored schemes relating to cooperatives, crop production programmes, watershed development programmes, horticulture, fertilizer, mechanization and seeds. The Scheme has been revised during 2008-09 to improve its efficacy in supplementing/complementing the efforts of the States towards enhancement of agricultural production and productivity. The role of the Scheme has been redefined to avoid overlapping and duplication of efforts and to make it more relevant to the present agricultural scenario in the States in order to achieve the basic objective of food security and to improve the livelihood system for rural masses. The Revised MMA comprises 10 sub-schemes relating to crop production and natural resource management.

Some of the salient features of the revised Scheme are:

- the practice of allocating funds to States/UTs on historical basis has been replaced by new allocation criteria based on gross cropped area and area under small and marginal holdings;
- assistance is provided to the States/UTs as 100 per cent grant;
- the subsidy structure has been rationalized to make the pattern of subsidy uniform under all the schemes implemented by the Department of Agriculture & Cooperation;
- the revised subsidy norms indicate the maximum permissible limit of assistance. States may either retain existing norms, or increase them to a reasonable level provided that the norms do not exceed the revised upper limits specified;
- two new components have been added, namely (a) pulses and oilseeds crop production programmes for areas not covered under the Integrated Scheme of Oilseeds, Pulses, Oil palm and Maize (ISOPOM) and (b) Reclamation of Acidic Soil along with the existing component of Reclamation of Alkali Soil;
- the permissible ceiling for new initiatives has been increased from the existing 10 per cent to 20 per cent of the allocation;
- at least 33 per cent of the funds is required to be earmarked for small, marginal and women farmers;
- active participation of all tiers of the Panchayati Raj institutions (PRIs) would have to be ensured in the implementation of the Revised MMA including review, monitoring and evaluation at district/sub-district level.

### (ii) National Food Security Mission (NFSM)

8.45 With a view to enhancing the production of rice, wheat and pulses by 10 million tonnes, 8 million tonnes and 2 million tonnes respectively by the end of the Eleventh Plan, the Centrally sponsored NFSM has been launched from the rabi 2007-08 season. The three major components of the Mission are NFSM-rice, NFSM-wheat and NFSM-pulses. The Mission aims to increase production through area expansion and productivity enhancement; restore soil fertility and productivity; create employment opportunities; and enhance the farm-level economy to restore confidence of farmers. The NFSM is presently being implemented in 312 identified districts of 17 States of the country.

8.46 Focused and target-oriented technological intervention under the NFSM has made significant impact since its inception, reflected in the increase in production of rice and wheat in 2008-09.

### (iii) Rashtriya Krishi Vikas Yojana (RKVY)

8.47 The RKVY, a flagship scheme of the Government in the agriculture and allied sectors was launched in August 2007 to reorient current agricultural development strategies to meet the needs of farmers and rejuvenate the agricultural sector so as to achieve 4 per cent annual growth during the Eleventh Five Year Plan. The scheme has an envisaged outlay of Rs 25,000 crore for the Plan period in the form of Additional Central Assistance (ACA). Funds to the tune of Rs 4,133.69 crore were released to the States/UTs during 2007-08 and 2008-09. For the current year, a sum of Rs 4,100.00 crore has been allocated of which Rs 3,243.76 crore has been released to the States by December 31, 2009. Up to 83 per cent and 85.95 per cent of the allocations for 2007-08 and 2008-09 respectively have been utilized by the end of November 2009.

8.48 During 2008-09, the areas of focus in the agriculture sector were seeds, fertilizers, IPM testing laboratories, horticulture, farm mechanization, extension, crops, marketing and cooperatives. A welcome feature observed during 2008-09 was that States have stepped up activities in the animal husbandry, dairy and fisheries sectors. Further, about 25 per cent of the approved funds was earmarked for projects related to these allied sectors. Besides these, projects related to micro irrigation, agricultural research, watershed and others were also approved.

8.49 Apart from the RKVY, there are many other programmes and policies responsible for growth of agriculture and allied sectors in the States; however, the RKVY is expected to play a major role. The RKVY also incentivizes States to allocate more for agriculture and allied sectors in their plans. The States have indeed stepped up allocation to agriculture and allied sectors. Allocation to agriculture and allied sectors was 5.11 per cent of total State Plan Expenditure in 2006-07. This has gone up to 5.84 per cent in 2008-09 (revised estimates[RE]/Approved).

### (iv) ISOPOM

8.50 The Ministry of Agriculture has restructured oilseeds, pulses, oil palm and maize development programmes into one Centrally Sponsored Integrated

Scheme of Oilseeds, Pulses, Oil Palm and Maize which is being implemented in 14 major States for oilseeds and pulses, 15 States for maize and 8 States for oil palm. About 75-80 per cent area of pulses is already in the NFSM-Pulses districts under 14 States.

8.51 The Oil Palm Development Programme under ISOPOM is being implemented in the States of Andhra Pradesh, Karnataka, Tamil Nadu, Gujarat, Goa, Orissa, Kerala, Tripura, Assam and Mizoram. The year-wise targets and achievements for the period 2007-08, 2008-09 and 2009-10 in respect of area coverage under oil palm through implementation of the Oil Palm Development Programme are given in Table 8.14.

**Table 8.14 : Targets and achievements in area coverage under oil palm through implementation of the Oil Palm Development Programme**

Year	Target (ha)	Achievement (ha)
2007-08	29,580	21,330
2008-09	31,500	26,178
2009-10	16,711	9,594 (up to October 2009)

Source: Department of Agriculture & Cooperation.

8.52 The area under maize cultivation is 81.80 lakh ha with production of 192.80 lakh tonnes in 2008-09. About 90 per cent of the maize cultivated in kharif is rainfed. Maize is cultivated mainly for food, fodder, feed and industrial use. Under ISOPOM, the Maize Development Programme is being implemented in 15 States, namely Andhra Pradesh, Bihar, Chhatisgarh, Himachal Pradesh, Jammu & Kashmir, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal.

### (v) National Rainfed Area Authority (NRAA)

8.53 The Government of India has also constituted the NRAA to give focused attention to the problem of rainfed areas of the country. The Authority is an advisory, policymaking and monitoring body charged with examining guidelines in various existing schemes and in the formulation of new schemes including all externally aided projects in this area. Its mandate is wider than mere water conservation and covers all aspects of sustainable and holistic

development of rainfed areas, including appropriate farming and livelihood systems approaches. It would also focus on issues pertaining to landless and marginal farmers, since they constitute the large majority of inhabitants of rainfed areas. The NRAA has formulated common guidelines for the Watershed Development Project and is in consultation with all the States for its implementation as per instructions contained in the guidelines.

### (vi) Drought Management

8.54 During the year 2009-10, drought/scarcity/drought-like situation has been declared in 334 districts by 14 State Governments. The States have ready availability of funds under the Calamity Relief Fund (CRF) for taking immediate necessary measures in the wake of natural calamities including drought. For natural calamities of severe nature, the State Governments can seek additional assistance from the National Calamity Contingency Fund (NCCF), by submitting a detailed Memorandum with relevant details. Several steps were taken to mitigate the hardship being faced by the States due to the drought situation. Some of the important measures were:

- States were requested to prepare alternate plans for unsown/germination-failed areas with short-duration/alternate crops;
- The Diesel Subsidy Scheme was launched to provide supplementary protective irrigation to save the standing crops (50 per cent of the cost of the subsidy with cap of Rs7.50/litre given by the States was borne by the Central Government);
- Use of Truthfully Labelled (TL) seeds, relaxation of age for seed varieties and distribution of mini kits were allowed under the NFSM, RKVY;
- Area-specific approach was adopted to achieve higher production through provisioning of inputs like fertilizers, credit and pest control measures in areas with higher rainfall;
- Agricultural advisories for appropriate crop programmes were telecast/broadcast through the media for the benefit of farmers. Scientists from ICAR institutions, Krishi Vigyan Kendras (KVKs) as well as experts of the National Rainfed Area Authority (NRAA) helped the States in their efforts to counter the impact of deficit rainfall/drought on agriculture;

- Zonal conferences and a Rabi Campaign Programme with the State Governments were held to enable formulation of an appropriate action plan for the rabi season;
- Funds were made available under Centrally sponsored programmes like the RKVY, NFSM, NHM, MMA and ISOPOM to enable taking up of an agricultural reconstruction programme.

## ALLIED SECTORS

### Horticulture

8.55 India is a major producer of fruits and vegetables in the world. For the holistic development of the horticulture sector, a Centrally sponsored scheme called the National Horticulture Mission (NHM) was launched in 2005-06. The objectives of the Mission are to enhance horticulture production and improve nutritional security and income support to farm households and others through area-based regionally differentiated strategies. All States and two Union Territories (Andaman & Nicobar Islands and Lakshadweep) are covered under the Mission except the eight north-eastern States including Sikkim and the States of Jammu & Kashmir, Himachal Pradesh and Uttarakhand which are covered under the Technology Mission for Integrated Development of Horticulture in the North Eastern States (TMNE). At present, 344 districts have been included under the NHM. Crops such as fruits, spices, flowers, medicinal and aromatic plants, plantation crops of cashew and cocoa are included for area expansion, whereas vegetables are covered through seed production, protected cultivation, integrated nutrient management/ integrated pest management (INM/IPM) and organic farming. Under the scheme, 1,710 new nurseries have been set up, an additional area of 8.26 lakh ha has been brought under various horticultural crops and an area of 1.2 lakh ha of old and senile plantations has been rejuvenated. Further, organic farming and Integrated Pest Management programmes have been taken up in 0.76 lakh ha and 4.0 lakh ha respectively. Under the post harvest management component, 898 pack houses, 46 cold storages, 14 refrigerated vans, 7 wholesale markets and 45 rural markets have been set up. The impact of the Mission can be seen in the increasing area and production of fruits and vegetables.

8.56 Under the Technology Mission for Integrated Development of Horticulture in the North Eastern Region during 2008-09, an additional area of 1,48,071 lakh ha has been brought under different horticultural

crops. Further, infrastructure facilities for improving production and productivity of crops such as model nurseries, community tanks, tube wells, greenhouses, model floriculture centres, mushroom units, vermi-compost units, training of farmers/trainers, training of women and market infrastructure and processing units, which are project based, have also been created. Apart from introduction of improved production technology in traditional crops, a significant contribution of the Mission has been in the promotion of commercial cultivation of potential crops, namely citrus, fruits, banana, pineapple, strawberry, kiwi, apple, passion fruits; anthuriums, roses, lilliums, orchids and other cut flowers; and high value vegetable crops. The most remarkable development under the scheme has been the expansion of area under specific crops in the States and in clusters which will facilitate easy marketing access in the future.

8.57 A proposal for implementation of a pilot project for Replanting and Rejuvenation of Coconut Gardens in Thiruvananthapuram, Kollam and Thrissur districts of Kerala and the Union Territory of Andaman & Nicobar Islands has been approved.

### Micro Irrigation

8.58 A Centrally sponsored scheme on micro irrigation (MI) was launched in January 2006 for promoting water-use efficiency by adopting drip and sprinkler irrigation. All States and Union Territories and all horticultural as well as agricultural crops are covered under the scheme. The National Committee on Plasticulture Applications in Horticulture (NCPAH) provides the required technical guidance in association with Precision Farming Development Centres (PFDCs) at 22 locations. The PRIs are involved in selecting the beneficiaries. Since its inception, about 10 lakh ha has been covered under drip and sprinkler irrigation and a sum of Rs 1425.23 crore has been released as Government of India share (40 per cent of the total cost) in the scheme.

### National Bamboo Mission (NBM)

8.59 The NBM is a Centrally sponsored scheme with 100 per cent Central assistance. The scheme commenced in 2006-07 and aims at holistic development of the bamboo sector in India. The thrust of the Mission is area-based regionally differentiated strategy for forest and non-forest areas. So far, 1,05,508 ha has been covered under bamboo plantation, 30,167 ha of existing stocks has been treated for productivity improvement, 1,104 nurseries

have been established for supply of quality planting material and 29,831 farmers/entrepreneurs/field functionaries have been trained to raise quality bamboo plantations and in marketing of bamboo produce. So far, the NBM has been concentrating on plantation and related activities; there are plans to extend the Mission to the development of handicraft and marketing of bamboo. The Mission intends to establish 195 bamboo bazaars and 10 retail outlets (showrooms) in different metropolitan cities by the end of 2010-11, to promote marketing of bamboo and its products.

### Rubber

8.60 India is the fourth largest producer of natural rubber (NR) with an 8.9 per cent share in world production in 2008. The smallholding sector accounted for 89 per cent of rubber planted area and 93 per cent of NR production. Despite not having regions geographically best suited to growing NR, India continued to record the highest productivity in the world with an average yield of 1,867 kg/ha. Productivity is further being improved through the Rubber Plantation Development Schemes in the Eleventh Five year Plan. The Schemes provide subsidy on planting, supply of critical inputs with price concession, assistance for soil and water conservation and generation and distribution of quality planting materials.

8.61 In 2008-09, the estimated export of NR was 46,926 tonnes against an import of 77,616 tonnes. The export of NR is promoted through Export Promotion Schemes, which include participation in international trade fairs, assistance to exporters to participate in trade fairs and, organizing buyer-seller meets.

### Coffee

8.62 Among plantation crops, coffee has made significant contribution to the Indian economy during the last 50 years. Indian coffee has created a niche for itself in the international market, particularly Indian Robusta, which is highly sought after for its blending quality. Arabica coffee from India is also well received in the international market.

8.63 In India, coffee is cultivated in an area of around 3.94 lakh ha. The post-monsoon crop estimate for the 2009-10 season is estimated at 2.90 lakh tonnes comprising 0.95 lakh tonnes of Arabica and 1.95 lakh tonnes of Robusta. The current year's production is about 10.6 per cent more than the previous year's.

## ANIMAL HUSBANDRY, DAIRYING AND FISHERIES

8.64 The livestock and fisheries sector contributed over 4.07 per cent of the total GDP during 2008-09 and about 26.84 per cent value of output from total agriculture and allied activities. The Eleventh Five Year Plan envisages an overall growth of 6-7 per cent per annum for the sector. In 2008-09, this sector contributed 108.5 million tonnes of milk, 55.6 billion eggs, 42.7 million kg wool and 3.8 million tonnes of meat. The 17th Livestock Census (2003) has placed the total livestock population at 485 million and total of poultry birds at 489 million. The 18th Livestock Census has been conducted throughout the country with the reference date of October 15, 2007, results of which are awaited.

8.65 India ranks first in world milk production, its production having increased from 17 million tonnes in 1950-51 to 108.5 million tonnes by 2008-09. The per capita availability of milk has increased from 112 grams per day in 1968-69 to 258 grams per day in 2008-09, but is still low compared to the world average of 265 grams per day (Table 8.15). About 80 per cent of milk produced in the country is handled in the unorganized sector and the remaining 20 per cent is equally shared by cooperatives and private dairies. Over 1.33 lakh village-level dairy cooperative societies, spread over 265 districts in the country, collect about 25.1 million litres of milk per day and market about 20 million litres. The efforts of the Government in the dairy sector are concentrated in promotion of dairy activities in non-Operation Flood areas with emphasis on building cooperative infrastructure, revitalization of sick dairy cooperatives and federations and creation of infrastructure in the States.

**Table 8.15 : Production and per capita availability of milk**

Year	Per capita (grams/day)	Milk production (MT)
1990-91	176	53.9
2000-01	220	80.6
2005-06	241	97.1
2006-07	246	100.9
2007-08	252	104.8
2008-09	258	108.5

Source: Department of Animal Husbandry and Dairying.

8.66 A major programme for genetic improvement of cattle and buffaloes named the National Project for Cattle and Buffalo Breeding (NPCBB) was launched in October 2000 to be implemented over a period of 10 years in two phases of five years each with an allocation of Rs 402 crore and Rs 775.9 crore respectively. The NPCBB envisages genetic upgradation and development of indigenous breeds on priority basis. At present, 28 states and one UT are participating in the project. Financial assistance to the tune of Rs 485.73 crore was released to these states up to 2008-09. During the current financial year, Rs 93.31 crore has been released under the scheme to the implementing agencies till December 2009.

### Livestock insurance

8.67 A Centrally sponsored scheme for livestock insurance is being implemented in all the States with the twin objectives of providing a protection mechanism to farmers and cattle rearers against loss of their animals due to death and to demonstrate the benefit of livestock insurance to the people. The scheme benefits farmers (large, small and marginal) and cattle rearers having indigenous/crossbred milch cattle and buffaloes. In 2009-10, Rs 23.28 crore has been released up to December 2009 and 13.16 lakh animals have been insured up to 2008-2009. The scheme has been extended from 100 districts to 300 districts from December 2009, covering all States.

### Poultry

8.68 Poultry continues to play an important role in providing livelihood support and food security, especially to the rural population. India produces more than 55.6 billion eggs per year, with per capita availability of 47 eggs per annum. As per the estimate provided by the Food and Agriculture Organization (FAO) for 2008, the annual chicken meat production in India is around 2.49 million tonnes. The value of exports was around Rs 422 crore during 2008-09. Eggs and poultry are among the cheaper source of animal protein. During 2009-10, a new Centrally sponsored Poultry Development Scheme with an outlay of Rs 150 crore was launched. The scheme, through its Rural Backyard Poultry Development component is expected to cover below poverty line (BPL) sections of the society to help them gain supplementary income and nutritional support. In order to encourage entrepreneurship skills of individuals, a Poultry Venture Capital Fund is also being implemented covering various poultry activities.

## Livestock health

8.69 Animal wealth in India has increased manifold and animal husbandry practices have also changed to a great extent. With increased trade activity, the chances of ingress of exotic diseases into the country have also increased. With improvement in the quality of livestock through launching of extensive cross-breeding programmes, the susceptibility of this livestock to various diseases, including exotic diseases, has increased. To ensure maintenance of disease-free status and compliance with the standards laid down by the World Animal Health Organization, major animal health schemes and programmes have been initiated. Further, for control of major livestock and poultry diseases, the Government of India provides financial assistance to States/UTs in their efforts to prevent, control and contain animal diseases and also to strengthen veterinary services including reporting of animal diseases. All avian influenza outbreaks reported were effectively controlled and the country was free from avian influenza in October 2009. Control and containment operations for the recent outbreak reported on January 14, 2010 in Khargram block of West Bengal are in full swing.

## Fisheries

8.70 Fish production increased from 7.1 million tonnes in 2007-08 to 7.6 million tonnes in 2008-09. Fishing, aquaculture and allied activities are reported to have provided livelihood to over 14 million persons in 2006-07 apart from being a major foreign exchange earner (Table 8.16).

## Feed and fodder

8.71 Adequate availability of feed and fodder for livestock is very vital for increasing milk production

and sustaining the ongoing genetic improvement programme. It is estimated that there is green fodder shortage of about 34 per cent in the country. To increase the availability of fodder, the Department of Animal Husbandry & Dairying is implementing a Centrally sponsored Fodder Development Scheme throughout the country to supplement the efforts of the States. Financial assistance to the tune of Rs 719.76 lakh (up to December 2009) has been provided to the States during 2009-10. A Central Minikit Testing Programme is also being implemented under which minikits of latest high-yielding fodder varieties are distributed free of cost to farmers for their popularization. During the current year (2009-10) 9.23 lakh minikits have been allotted to the States for distribution to farmers.

## CREDIT AND INSURANCE

### Agricultural Credit

8.72 In order to provide adequate and timely credit support from the banking system to farmers for their cultivation needs, including purchase of all inputs, in a flexible and cost-effective manner, the Kisan Credit Card Scheme (KCC) was introduced in August 1998. About 878.30 lakh KCCs have been issued up to November 2009. The Scheme includes a reasonable component of consumption credit and investment credit within the overall credit limit sanctioned.

8.73 From kharif 2006-07, farmers have been receiving crop loans up to a principal amount of Rs 3 lakh, at 7 per cent rate of interest. Additional subvention of 1 per cent will be paid from the current year, as incentive to those farmers who repay short-term crop loans on schedule resulting in bringing down the rate of interest to 6 per cent per annum.

**Table 8.16 : Production and export of fish**

Year	Fish production (million tonnes)			Export of marine products	
	Marine	Inland	Total	Qty ('000 tonnes)	Value (Rs crore)
1990-91	2.3	1.5	3.8	140	893
2000-01	2.8	2.8	5.6	503	6,288
2003-04	3.0	3.4	6.4	412	6,087
2004-05	2.8	3.5	6.3	482	6,460
2005-06	2.8	3.8	6.6	551	7,019
2006-07	3.0	3.8	6.8	612	8,363
2007-08	2.9	4.2	7.1	541	7,620
2008-09	2.9	4.7	7.6	603	8,608

Source: Department of Animal Husbandry & Dairying.

8.74 In January 2006, the Government announced a package for revival of short-term Rural Cooperative Credit involving financial assistance of Rs 13,596 crore. The National Agriculture and Rural Development Bank (NABARD) has been designated as the implementing agency for the purpose. States are required to sign memorandums of understanding (MoUs) with the Government of India and NABARD, committing to implementing the legal, institutional and other reforms as envisaged in the revival package. So far twenty-five States have executed MoUs with the Government of India and NABARD. This covers 96 per cent of the primary agricultural credit societies (PACS) and 96 per cent of the Central cooperative banks (CCBs) in the country. As on November 2009, Rs 7,051.75 crore has been released by NABARD as the Government of India share for recapitalization of 37,303 PACS.

8.75 Government is implementing a rehabilitation package for 31 suicide-prone districts in the States of Andhra Pradesh, Karnataka, Kerala and Maharashtra involving financial outlay of Rs 16978.69 crore. An amount of Rs 16,953.04 crore has been released under this package till September 2009. For the state of Kerala, the Government is implementing separate packages for the development of the Kuttanad Wetland Eco-System and mitigation of agrarian distress in Idukki district with an outlay of Rs 1,840.75 crore and Rs 764.45 crore respectively.

8.76 A debt waiver and debt relief scheme for farmers announced by the Government in the Union Budget 2008-09 is under implementation. Direct agricultural loans disbursed by scheduled commercial banks, regional rural banks and cooperative credit institutions up to March 31, 2007, overdue as on December 31, 2007 and which remained unpaid until February 29, 2008, are eligible for debt waiver or debt relief as the case may be. About 3.68 crore farmers have benefited from the scheme involving debt waiver and debt relief of Rs 65,318.33 crore.

### Agricultural Insurance

8.77 The frequency and severity of droughts, floods, cyclones and erratic climatic changes accentuate uncertainty and risk in agricultural production and livestock breeding in India. The National Agricultural Insurance Scheme (NAIS) is being implemented since rabi 1999-2000, as part of the strategy for risk management in agriculture with the intention of providing financial support to farmers in the event of crop failure as a result of natural calamities, pests

and diseases. The scheme is open to all the farmers-loanee and non-loanee-irrespective of their size of holding. Loanee farmers are covered on compulsory basis in a notified area for notified crops. For non-loanee farmers, participation in the scheme is on voluntary basis. The scheme envisages coverage of all food crops, oilseeds and annual commercial/horticultural crops, in respect of which past yield data are available for adequate number of years. The scheme is being implemented by 25 States and two Union Territories. During the period from rabi 1999-2000 to rabi 2008-09, 1,347 lakh farmers over an area of 2,109 lakh ha have been covered, insuring a sum of Rs 1,48,250 crore.

8.78 The pilot Weather Based Crop Insurance Scheme (WBCIS) is being implemented in 13 States to provide insurance protection to farmers against adverse weather incidences which are deemed to adversely impact crop production. During five crop seasons (from kharif 2007 to kharif 2009), about 21.77 lakh farmers have been covered under the pilot scheme and claims to the tune of about Rs 388 crore have been paid against a premium of about Rs 444 crore.

8.79 The Coconut Palm Insurance Scheme (CPIS) has been launched on pilot basis during 2009-10 in selected areas of Andhra Pradesh, Goa, Karnataka, Kerala, Maharashtra, Orissa and Tamil Nadu. The pilot scheme will continue during 2010-11. To benefit from the scheme, a farmer should have at least 10 healthy nut-bearing palms in the age group 4 to 60 years in contiguous area/plots and to have been enrolled by the State Agriculture/Horticulture Department or Coconut Development Board (CDB) or any other such agency under a rehabilitation/development/expansion scheme. The Agriculture Insurance Company of India (AIC) which is implementing the scheme is responsible for making payment of all claims within a specified period. The CDB administers the scheme.

## MARKETING AND EXTENSION

### Agricultural Marketing

8.80 Organized marketing of agricultural commodities has been promoted in the country through a network of regulated markets. Most of the State and Union Territory Governments have enacted legislations (Agriculture Produce Marketing Committee Act) to provide for regulation of agricultural produce markets. There are 7,139 regulated markets in the country as on March 31, 2009. The country

**Table 8.17 : Progress of reforms in agricultural markets (APMC Act) as on 31.12.2009**

Sl. No.	Stage of reforms	Name of State/ Union territory
1.	States/ UTs where reforms to the APMC Act have been undertaken as suggested.	Andhra Pradesh, Arunachal Pradesh, Assam, Chattisgarh, Goa, Gujarat, Himachal Pradesh, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Nagaland, Orissa, Rajasthan, Sikkim, Tripura
2.	States/ UTs where APMC Act has been partially reformed) by amending the APMC Act/ resolution	a) <u>Direct Marketing:</u> NCT of Delhi b) <u>Contract Farming:</u> Haryana, Punjab and Chandigarh c) <u>Private Markets:</u> Punjab and Chandigarh
3.	States/ UTs where there is no APMC Act and hence not requiring reforms	Kerala, Manipur, Bihar*, Andaman & Nicobar Islands, Dadra & Nagar Haveli, Daman & Diu and Lakshadweep
4.	States/ UTs where APMC Act already provides for the reforms	Tamil Nadu
5.	States/ UTs where administrative action has been initiated for reforms	Mizoram, Meghalaya, Haryana, Jammu&Kashmir, Uttarkhand, West Bengal, NCT of Delhi and Pondicherry

**Note:** \* APMC Act has been repealed with effect from September 1, 2006.

has 20,868 rural periodical markets, about 15 per cent of which function under the ambit of regulation. The advent of regulated markets has helped mitigate the market handicaps of producers/sellers at the wholesale assembling level. But rural periodic markets in general and tribal markets in particular have remained outside the developmental ambit of the APMC Act.

8.81 The Ministry of Agriculture has formulated a Model Law on agricultural marketing for guidance of and adoption by State Governments. The legislation provides for establishment of private markets/yards, direct purchase centres, consumers'/farmers' markets for direct sale and promotion of public-private partnership in the management and development of agricultural markets in the country. Provision has also been made in the law for constitution of State Agricultural Produce Marketing Standards Bureaus for promotion of grading, standardization and quality certification of agricultural produce. This would facilitate pledge financing, direct purchasing, forward/futures trading and exports. Sixteen States/UTs have amended their APMC Acts and the remaining States are in the process of doing so (Table 8.17). APMC Model Rules based on the Model Law are under formulation in consultation with States.

## Extension reforms

8.82 The Government supports transfer of agricultural technologies and information to the farming community through various initiatives. The Support to State Extension Programmes for the Extension Reforms scheme launched in 2005-06, aims to make the extension system farmer driven and farmer accountable by way of new institutional arrangements for technology dissemination in the form of an Agricultural Technology Management Agency (ATMA) at district level. The ATMA has active participation of farmers/farmer groups, non-governmental organizations (NGOs), KVKs, PRIs and other stakeholders operating at district level and below. Up to January 2010, 595 districts-level ATMAs have been established. Gender concerns are being mainstreamed by mandating that 30 per cent of resources on programmes and activities are allocated for women farmers and extension functionaries. Since inception, out of a total of 10.19 crore farmer beneficiaries, 25.80 lakh women farmers (25.34 per cent) have participated in various extension activities under the scheme. Further, the Mass Media Support to Agriculture scheme is focusing on the use of Doordarshan infrastructure for providing agriculture-related information and

knowledge to the farming community. The other component of the mass media initiative is use of 96 FM transmitters of All India Radio (AIR) to broadcast area-specific agricultural programmes with 30-minute radio transmission in the evening, six days a week. The Kisan Call Centres scheme provides the farming community agricultural information through toll-free telephone lines. A country-wide common eleven digit number "1800-180-1551" has been allocated for the Kisan Call Centres. The Agri-clinic and Agri-business Centres Scheme launched in 2002 provides extension services to farmers through agriculture graduates on payment basis by setting up of economically viable self-employment ventures. NABARD monitors the credit support to Agri-clinics through commercial banks. Provision of a credit-linked back-ended subsidy at 25 per cent of the capital cost of the project funded through bank loan as well as full interest subsidy on the bank credit for the first two years has recently been approved under the scheme. The subsidy would be 33.33 per cent in respect of candidates belonging to Scheduled Castes (SC), Scheduled Tribes (ST), women and other disadvantaged sections and those from the north-eastern and hill States. Under the scheme, 19,854 unemployed agriculture graduates have been trained up to December 2009.

## FOOD MANAGEMENT

8.83 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 the MSP and central issue price (CIP). The nodal agency which undertakes 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 the beneficiaries. The offtake of foodgrains is primarily under the targeted public distribution system (TPDS) and for other welfare schemes of the Government of India. Offtake of foodgrains under the TPDS has been increasing in the last five years and has gone up from 29.7 million tonnes in 2004-05 to 34.8 million tonnes in 2008-09 (Table 8.18).

### Procurement of foodgrains

8.84 Overall procurement of rice and wheat which was 35.8 million tonnes in 2006-07, increased marginally to 37.6 million tonnes in 2007-08. However, increased MSP along with various other steps taken by the Government has resulted in record wheat procurement of 22.69 million tonnes in 2008-09 and

**Table 8.18 : Procurement and offtake of wheat and rice (million tonnes)**

	2004-05	2005-06	2006-07	2007-08	2008-09	April- Dec.	
						2008-09	2009-10
<b>Procurement of Wheat and Rice under the Central Pool</b>							
Rice	24.0	26.7	26.3	26.3	32.8	22.1	22.9
Wheat	16.8	14.8	9.2	11.1	22.7	22.7	25.4
<b>Total</b>	<b>41.6</b>	<b>42.4</b>	<b>35.8</b>	<b>37.6</b>	<b>55.5</b>	<b>44.8</b>	<b>48.3</b>
<b>Offtake of Wheat and Rice for the TPDS</b>							
Rice	16.6	19.2	21.2	22.6	22.2	14.9	18.1
Wheat	13.1	12.2	10.4	10.9	12.6	8.1	14.4
<b>Total (A)</b>	<b>29.7</b>	<b>31.4</b>	<b>31.6</b>	<b>33.5</b>	<b>34.8</b>	<b>23.0</b>	<b>32.4</b>
BPL (Rice+Wheat)	17.5	15.6	14.2	15.1	15.7	10.5	12.4
APL (Rice+Wheat)	6.7	8.3	8.7	9.0	9.6	6.1	12.5
AAY (Rice+Wheat)	5.5	7.4	8.7	9.4	9.5	6.4	7.4
<b>Offtake of Wheat and Rice for Other Schemes</b>							
Welfare Scheme (B)	10.6	9.7	5.1	3.9	3.4	2.0	2.9
Open sales/ Exports (C)	1.2	1.1	0.0	0.02	1.2	0.1	0.5
<b>Total (A+B+C)</b>	<b>41.5</b>	<b>42.1</b>	<b>36.7</b>	<b>37.4</b>	<b>39.5</b>	<b>25.1</b>	<b>35.8</b>

Source: Department of Food and Public Distribution.

**Table 8.19 : Procurement of rice (marketing year-wise)**

State/UT	Qty (lakh tonnes)			Percentage share		
	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09
A & N Islands	-	-	-	-	0.00	-
Andhra Pradesh	53.28	74.17	90.61	21.22	26.03	26.90
Assam	-	-	0.03	-	0.00	0.01
Bihar	4.76	5.12	10.83	1.90	1.80	3.22
Chandigarh	0.1	0.09	0.10	0.04	0.03	0.03
Chhattisgarh	28.65	27.43	28.48	11.41	9.63	8.46
Delhi	-	-	-	-	-	-
Gujarat	-	0.19	-	-	0.07	-
Haryana	17.77	15.72	14.25	7.08	5.52	4.23
Himachal Pradesh	-	-	-	-	-	-
J & K	-	-	0.06	-	-	0.02
Jharkhand	0.05	0.19	1.35	0.02	0.07	0.4
Karnataka	0.22	0.18	1.07	0.09	0.06	0.32
Kerala	1.51	1.68	2.37	0.60	0.59	0.7
Madhya Pradesh	0.74	0.69	2.45	0.29	0.24	0.73
Maharashtra	0.97	1.6	2.61	0.39	0.56	0.77
Nagaland	-	-	-	-	-	-
Orissa	20.02	23.38	27.90	7.97	8.21	8.28
Pondicherry	0.07	0.06	0.07	0.03	0.02	0.02
Punjab	78.29	79.08	85.53	31.18	27.76	25.39
Rajasthan	0.1	0.19	0.11	0.04	0.07	0.03
Tamil Nadu	10.77	9.68	11.99	4.29	3.40	3.56
Uttar Pradesh	25.59	28.91	36.87	10.19	10.15	10.95
Uttaranchal	1.76	1.47	3.49	0.70	0.52	1.04
West Bengal	6.42	15.08	16.67	2.56	5.29	4.95
<b>Total</b>	<b>251.07</b>	<b>284.91</b>	<b>336.84</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: Department of Food & Public Distribution

25.38 million tonnes in 2009-10 (April to December). As regards rice, the procurement in 2008-09 was 32.8 million tonnes and 22.9 million tonnes in 2009-10 (April – December). The record procurement of rice and wheat during 2007-08, 2008-09 and 2009-10 (April December) has resulted in comfortable food-stock availability to meet the TPDS needs and buffer stocks norms.

8.85 As in earlier years, procurement of foodgrains by the FCI continues to be higher in the States of Punjab, Haryana, Uttar Pradesh and Andhra Pradesh. These four States accounted for nearly 69.7 per cent of the rice procured for the Central Pool in 2006-07, 69.46 per cent in 2007-08 and 67.47 per cent in 2008-09 (Table 8.19).

8.86 Punjab and Haryana which accounted for 91.1 per cent of procurement of wheat for the Central Pool in 2007-08, accounted for 66.88 per cent in 2008-09 and 69.53 per cent in 2009-10, indicating an increased share in procurement by other states (Table 8.20).

8.87 The overall procurement of coarse grains in the kharif marketing season (KMS) 2008-09 has increased to 13.75 lakh tonnes due to a substantial increase in MSPs of coarse grains in KMS 2008-09 (Table 8.21).

### Decentralized Procurement Scheme (DCP)

8.88 A number of states have opted for implementation of the (DCP) introduced in 1997, under which foodgrains are procured and distributed by the State Governments themselves. Under this scheme, the designated States procure, store and issue foodgrains under the TPDS and welfare schemes of the Government of India. The difference between the economic cost fixed for the State and the CIPis 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 more suited to local tastes and reducing transportation costs. Food

**Table 8.20 : Procurement of wheat (marketing year-wise)**

State/UT	Qty (lakh tonnes)			Percentage share		
	2007-08	2008-09	2009-10	2007-08	2008-09	2009-10
Bihar	0.08	5	4.97	0.07	2.20	1.96
Haryana	33.5	52.31	69.24	30.11	23.06	27.28
Himachal Pradesh	-	-	0.01	-	-	-
Madhya Pradesh	0.57	24.1	19.68	0.51	10.63	7.75
Punjab	67.81	99.39	107.25	60.94	43.82	42.25
Rajasthan	3.83	9.35	11.52	3.44	4.12	4.54
Uttaranchal	0.02	0.85	1.45	0.02	0.37	0.57
Uttar Pradesh	5.46	31.37	38.82	4.91	13.83	15.29
Chandigarh	-	0.1	0.12	-	0.00	0.05
Delhi	-	0.07	-	-	0.00	-
Gujarat	-	4.15	0.57	-	1.83	0.22
Maharashtra	-	0.1	-	-	0.04	-
Jharkhand	-	0.02	-	-	0.01	-
J&K	-	0.01	-	-	-	-
<b>Total</b>	<b>111.27</b>	<b>226.82</b>	<b>253.82</b>	<b>100</b>	<b>100.00</b>	<b>100.00</b>

Source: Department of Food & Public Distribution.

**Table 8.21 : Details of coarse grain procurement during last four years and the current KMS**

Year	Procurement (lakh tonnes)
2005-06	11.50
2006-07	0.002
2007-08	2.03
2008-09	13.75
2009-10 (till Dec. 2009)	0.80

Source : Department of Food & Public Distribution.

subsidy released to various States under DCP operations from 2007-08 is given in Table 8.22.

8.89 In the case of rice, States under DCP operations have shown a healthy trend of increasing procurement. In KMS 2007-08, rice procurement in DCP States was 107.83 lakh tonnes as against 94.7 lakh tonnes in KMS 2006-07. In KMS 2008-09, rice procurement by DCP States was 128.84 lakh tonnes (Table 8.23).

8.90 In the case of wheat, however, the procurement in DCP States, particularly Uttar Pradesh and Madhya Pradesh, was rather low in rabi marketing

**Table 8.22 : Food subsidy released to various States under DCP operations from 2007-08 (Rupees crore)**

State/UT	2007-08	2008-09	2009-10*
Madhya Pradesh	41.596	1,101.810	882.620
Uttar Pradesh	1,625.618	2,875.640	3,978.170
West Bengal	269.020	657.400	901.210
Chhattisgarh	621.000	842.830	655.610
Uttaranchal	68.650	98.050	180.400
Tamil Nadu	272.210	592.240	524.420
Orissa	503.480	724.820	727.800
Kerala	97.840	31.190	224.270
Karnataka	0.590	0.000	0.000
<b>Total</b>	<b>3,500.00</b>	<b>6,923.98</b>	<b>8,074.50*</b>

Source: Department of Food & Public Distribution.

\* as on December 29, 2009.

**Table 8.23 : Procurement of rice in DCP States (in lakh tonnes)**

State	KMS 2002-03	KMS 2003-04	KMS 2004-05	KMS 2005-06	KMS 2006-07	KMS 2007-08	KMS 2008-09
Chhattisgarh	12.9	23.7	28.4	32.7	28.6	27.43	28.48
Karnataka	-	-	0.2	0.5	0.2	0.18	1.07
Kerala	-	-	0.3	0.9	1.5	1.70	2.37
Orissa	8.9	13.7	15.9	17.9	19.9	23.38	27.90
Tamil Nadu	1.1	2.1	6.5	9.3	10.8	9.68	11.99
Uttar Pradesh	13.6	25.5	29.7	31.5	25.5	28.91	36.87
Uttranchal	2.3	3.2	3.2	3.4	1.8	1.47	3.49
West Bengal	1.3	9.3	9.4	12.8	6.4	15.08	16.67
A&N Islands	-	Neg.	Neg.	-	-	0.0	0
Total	40.1	77.5	93.6	109.0	94.7	107.83	128.84

Source: Department of Food & Public Distribution.  
Neg. : below 500 tonnes.

seasons (RMS) 2006-07 and 2007-08, primarily due to aggressive purchases by private companies on expectation of higher market prices, lower rates of taxes and levies compared to Punjab and Haryana and proximity to markets in southern and western states of the country. However, there was record procurement of wheat in RMSs 2008-09 and 2009-10 (Table 8.24).

### Buffer stock

8.91 The stock of foodgrains in the Central Pool at 15.7 million tonnes as on April 1, 2006 was marginally lower than the minimum buffer norm of 16.2 million tonnes. This increased to 17.9 million tonnes on April 1, 2007. The stock position as on April 1, 2008 was 19.6 million tonnes. The stock position of foodgrains as on April 1, 2009 was 35.0 million tonnes comprising 21.6 million tonnes of rice and 13.4 million tonnes of wheat against the buffer norm of 12.2 million tonnes and 4.0 million tonnes respectively. The stock position of foodgrains as on January 2010 is 47.4 million tonnes comprising 24.3 million tonnes of rice and 23.1 million tonnes of

wheat against buffer norms of 11.8 million tonnes and 8.2 million tonnes respectively. This is adequate to meet the requirements under the TPDS and welfare schemes during the current financial year (Table 8.25).

### Economic cost of foodgrains to the FCI

8.92 The economic cost of foodgrains consists of three components, namely MSP (and bonus) as the price paid to farmers, procurement incidentals and the cost of distribution. The economic cost for both wheat and rice witnessed a significant increase during the last three years due to increase in MSPs. The economic costs of wheat and rice for 2009-10 (budget estimates[BE]) are estimated at Rs1,504.39 per quintal and Rs1,893.71 per quintal respectively (Table 8.26). The FCI is reimbursed the difference between the economic cost of foodgrains and the issue price in the form of food subsidy. It has been pointed out that the high incidence of taxes and levies of over 10 per cent ad valorem on the procurement of foodgrains in the major processing States of Punjab, Haryana and Andhra Pradesh increases the

**Table 8.24 : Procurement of wheat in DCP States (in lakh tonnes)**

State	RMS 2002-03	RMS 2003-04	RMS 2004-05	RMS 2005-06	RMS 2006-07	RMS 2007-08	RMS 2008-09	RMS 2009-10
Uttar Pradesh	21.1	12.1	17.4	5.6	0.5	5.5	31.37	38.82
Madhya Pradesh	4.3	1.9	3.5	4.8	Neg.	0.6	24.09	19.68
Uttarakhand	1.8	0.7	0.6	0.4	Neg.	Neg.	0.85	1.45
Gujarat	0.0	0.0	0.0	0.0	0.0	0.0	4.15	0.57
Total	27.2	14.7	21.5	10.8	0.5	6.1	60.46	60.52

Source: Department of Food & Public Distribution.  
Neg. : below 500 tonnes.

**Table 8.25 : Stock position of wheat and rice in the Central pool vis-à-vis minimum buffer norms**

(in lakh tonnes)

ASON	WHEAT		RICE		TOTAL	
	Minimum buffer norms	Actual stock	Minimum buffer norms	Actual stock	Minimum buffer norms	Actual stock
January 2004	84	126.87	84	117.27	168	244.14
April	40	69.31	118	130.69	158	200.00
July	143	191.52	100	107.63	243	299.15
October	116	142.23	65	60.92	181	203.15
January 2005	84	89.31	84	127.63	168	216.94
April	40	40.66	122	133.41	162	174.07
July	171	144.54	98	100.71	269	245.25
October	110	102.90	52	48.49	162	151.39
January 2006	82	61.88	118	126.41	200	188.29
April	40	20.09	122	136.75	162	156.84
July	171	82.07	98	111.43	269	193.50
October	110	64.12	52	59.70	162	123.82
January 2007	82	54.28	118	119.77	200	174.05
April	40	47.03	122	131.72	162	178.75
July	171	129.26	98	109.77	269	239.04
October	110	101.21	52	54.89	162	156.10
January 2008	82	77.12	118	114.75	200	191.87
April	40	58.03	122	138.35	162	196.38
July	171	249.12	98	112.49	269	361.61
October	110	220.25	52	78.63	162	298.88
January 2009	82	182.12	118	175.76	200	357.88
April	40	134.29	122	216.04	162	350.33
July	171	329.22	98	196.16	269	525.38
October	110	284.57	52	153.49	162	438.06
January 2010	82	230.92	118	243.53	200	474.45

Source: Department of Food &amp; Public Distribution.

economic costs, which have a direct bearing on market prices. Further, expenditure incurred by the FCI on payment of Dami/Arthia charges, as per statutory notifications issued by some States, notably Punjab, Haryana, Uttar Pradesh and Rajasthan, also gets reflected in the economic costs.

### Offtake of foodgrains from the Central Pool

8.93 The offtake of foodgrains is primarily under the TPDS and other welfare schemes of Government of India. Under the TPDS, allocation is made on a scale of issue which is 35 kg per family for BPL and AAY (Antayodaya Anna Yojana) categories and the allocation is variable based on foodgrains availability for the above poverty line (APL) category. Offtake of foodgrains under the TPDS has been increasing in

the last five years and has gone up from 29.7 million tonnes in 2004-05 to 34.8 million tonnes in 2008-09.

### Food subsidy

8.94 Provision of minimum nutritional support to the poor through subsidized foodgrains and ensuring price stability in different States are the twin 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 gone up continuously, the issue price has been kept unchanged since July 1, 2002. The Government, therefore, continues to provide large amount of subsidy on foodgrains for distribution under the TPDS, other nutrition-based welfare schemes and open market operations (Tables 8.27 and 8.28).

Table 8.26 : Economic cost of rice and wheat

(Rs/quintal)

Year	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
<b>Rice</b>								
Procurement Incidentals	61.67	30.68	58.48	21.25	193.66	191.81	268.02	289.00
Distribution Cost	157.72	214.52	256.51	281.37	289.58	331.81	294.67	245.66
Economic Cost <sup>\$</sup>	1,165.03	1,236.09	1,303.59	1,350.67	1,391.18	1,563.70	1,789.78	1,893.71
<b>Per Cent Increase over Previous Year</b>								
Procurement Incidentals	-7.69	-50.25	90.61	-63.66	*	9.30	2.06	7.83
Distribution Cost	31.85	36.01	19.57	9.69	6.83	9.39	5.16	-16.63
Economic Cost	6.14	6.10	5.46	3.61	4.51	11.32	8.12	5.81
<b>Wheat</b>								
Procurement Incidentals	137.63	138.20	182.74	163.67	180.15	163.47	198.87	212.84
Distribution Cost	145.51	169.69	222.80	226.96	269.36	282.76	228.54	182.95
Economic Cost <sup>\$\$</sup>	884.00	918.69	1,019.01	1,031.51	1,177.78	1,353.24	1,392.68	1,402.51
<b>Per Cent Increase over Previous Year</b>								
Procurement Incidentals	2.19	0.41	32.23	-10.44	9.60	-1.98	16.40	7.02
Distribution Cost	14.88	16.63	31.30	1.87	23.45	1.28	3.25	-19.94
Economic Cost	3.64	3.92	10.92	1.23	17.73	11.06	8.17	0.70

Notes: \$ Weighted average of common and grade 'A' rice taken together

\$\$ Due to increase in MSP from Rs1,000 per quintal to Rs1,080 per quintal, the economic cost was revised to Rs1,504.39 per quintal. As per quick estimates made by FCI on May 18, 2009.

\* For rice, from 2006-07, in the procurement incidentals weightage of levy rice incidentals is also being taken.

Table 8.27 : Trends in MSP and CIP

(Rs/quintal)

Marketing season	MSP		CIP					
	Wheat	Paddy	Wheat			Rice		
			APL	BPL	AAY	APL	BPL	AAY
2002-03	620 a	530 a	610	415	200	795	565	300
2003-04	630	550	610	415	200	795	565	300
2004-05	640	560	610	415	200	795	565	300
2005-06	650 b	570	610	415	200	795	565	300
2006-07	750 d	580 c	610	415	200	795	565	300
2007-08	1,000	645 e	610	415	200	795	565	300
2008-09	1,080	850 f	610	415	200	795	565	300
2009-10	1,100	950 g	610	415	200	795	565	300

Source: Ministry of Agriculture.

Notes: a One-time special drought relief of Rs20 per quintal was given in the case of paddy over and above the existing MSP and Rs10 per quintal for wheat.

b An incentive bonus of Rs50 per quintal over the MSP given for wheat procured in RMS 2006-07 during the period 20.3.06 to 30.6.06.

c An incentive bonus of Rs40 per quintal over the MSP allowed for paddy procured in KMS 2006-07 till 31.3.2007. Applicability of bonus was extended up to 30.9.2007 for the states of Andhra Pradesh, Tamil Nadu, Orissa, West Bengal and Chhattisgarh. For Bihar and Kerala, it was extended up to 31.5.2007.

d An incentive bonus of Rs 100 per quintal over the MSP given for wheat procured in RMS 2007-08.

e An incentive bonus of Rs 100 per quintal over the MSP allowed for paddy/rice procured in the entire KMS 2007-08.

f An incentive bonus of Rs50 per quintal allowed over the MSP of paddy for KMS 2008-09.

g An incentive bonus of Rs50 per quintal allowed over the MSP of paddy for KMS 2009-10.

**Table 8.28 : Quantum of food subsidies released by Government**

Year	Food subsidy* (Rs crore)	Annual growth (per cent)
1999-2000	9,200.00	5.75
2000-01	12,010.00	30.54
2001-02	17,494.00	45.66
2002-03	24,176.45	38.20
2003-04	25,160.00	4.07
2004-05	25,746.45	2.33
2005-06	23,071.00	-10.39
2006-07	23,827.59	3.28
2007-08	31,259.68	31.19
2008-09	43,668.08	39.69
2009-10	46,906.68	7.42

\* Figures up to December 29,2009.  
Department of Food & Public Distribution.

### Allocation under the TPDS

8.95 Allocations of foodgrains for BPL and AAY categories are made at the rate of 35 kg per family per month for all accepted 6.52 crore families in the country. The total BPL and AAY allocations made during 2009-10 were 276.77 lakh tonnes comprising 181.05 lakh tonnes of rice and 95.72 lakh tonnes of wheat. Allocations under the APL category are made depending upon the availability of stocks of foodgrains in the Central Pool and past offtake. Presently, these allocations range between 10 kg and 35 kg per family per month in different States/UTs. During 2009-10, 197.17 lakh tonnes of foodgrains has been allocated to States/UTs under the APL category as against 112 lakh tonnes during 2008-09.

### Open Market Sale Scheme

8.96 In order to check inflationary trends in the food economy, the Government took a decision in August 2008 to release wheat into the open market under the Open Market Sales Scheme (Domestic). These releases have been made through (a) allocation to State/UT Governments for distribution to retail consumers; and (b) sale to bulk consumers by the FCI through open tenders. The release of wheat under the OMSS has helped stabilize wholesale prices of wheat.

### Sugar

8.97 Sugar production in India is cyclical in nature. High production of sugar in the 2006-07 and 2007-08 sugar seasons (October- September) was followed by low production in the 2008-09 sugar season. The production in the current sugar season 2009-10 is also expected to be low as compared to sugar seasons 2006-07 and 2007-08. The estimated production of sugar seasons 2006-07 and 2007-08 was 282 lakh tonnes and 263 lakh tonnes respectively, whereas the production of sugar in the 2008-09 sugar season is estimated at 146.8 lakh tonnes. Thus the production of sugar in the 2008-09 sugar season declined by about 116.2 lakh tonnes, which put pressure on prices.

8.98 The estimated sugarcane production as per the first advance estimates 2009-10 is 2,494.81 lakh tonnes against a production of 2,739.31 lakh tonnes as per the fourth advance estimates 2008-09. There is, therefore, decline in the production of sugarcane of about 9 per cent in the current year compared to last year. The production of sugar in the 2009-10 sugar season is estimated to be about 160 lakh tonnes. The Government has accordingly taken a number of measures to augment domestic stocks of sugar and also to moderate prices. This, inter alia, includes allowing sugar mills to import duty-free raw sugar on ton to ton basis under the advance authorization scheme with effect from February 17, 2009, which effectively implies meeting their export obligation two-three years later; allowing import of raw sugar at zero duty under open general licence (OGL) by sugar mills up to December 31, 2010; allowing import of white/refined sugar by STC/MMTC/PEC and NAFED up to 1 million tonnes under OGL at zero duty up to March 31,2010. Furthermore, the duty-free import of white/refined sugar under OGL has been opened to other Central/ State government agencies and to private trade in addition to existing designated agencies and levy obligation in respect of all imported raw sugar and white/ refined sugar has been removed.

8.99 Apart from measures taken to augment supplies, stockholding and turnover limits have been imposed in March 2009 in order to moderate prices of sugar. Further, even khandsari sugar units have been brought under the ambit of stockholding and turnover limits. Stockholding limits of not holding stocks exceeding fifteen days of the requirement on large consumers of sugar who are using or consuming more than 10 quintals of sugar per month have been

imposed. Futures trade in sugar in domestic exchanges has also been suspended in May 2009 till September 2010.

8.100 The concept of statutory minimum price in the case of sugarcane has been replaced by fair and remunerative price (FRP) which is to be uniformly applicable to all States to provide reasonable margins to sugarcane farmers on account of "risk" and "profit". The amendments to the Sugarcane (Control) Order 1966, have come into force from October 22, 2009. For the 2009-10 sugar season, the Central Government has fixed an FRP of Rs129.84 per quintal linked to a basic recovery rate of 9.5 per cent subject to a premium of Rs1.37 for every 0.1 percentage increase in recovery above that level.

### Edible Oils

8.101 Estimated production of oilseeds and net availability of edible oils from all domestic sources are given in Table 8.29. In order to increase the availability and control prices of edible oils, Government has reduced the custom duties on crude and refined edible oils to "nil" and 7.5 per cent respectively since April 1, 2008. It has been decided that this duty structure would continue till September 30, 2010. Export of all major edible oils from the country has been banned since March 17, 2008 up to 30.9.2010 (except coconut oil through Cochin Port and certain oils with minor forest origins). The tariff values on edible oils have been frozen in 2006. The Government had launched a scheme for "distribution of subsidized edible oils" in 2008-09 to provide relief to consumers from rising prices of edible oils. Under this scheme, imported edible oils were distributed through State Governments/UTs at the rate of 1 kg per ration card per month. The scheme continues in the current year (2009-10) with a subsidy of Rs 15

per kg on imported oil up to 10 lakh tonnes and has been extended till October 31, 2010.

## COMMODITY FUTURES MARKET

### Commodity futures market

8.102 Commodities traded on the commodity futures market during 2009 included a variety of agricultural commodities, bullion, crude oil, energy and metal products. Several new commodities were introduced for futures trading in 2009, such as almond, imported thermal coal, carbon credits and platinum. The commodity futures market facilitates the price discovery process and provides price risk management. Its effectiveness depends on the wider participation of all the stakeholders. The average daily value of trades in the commodity exchanges improved from Rs 16,400 crore during 2008 to Rs 23,200 crore in 2009. Agricultural commodities, bullion and energy accounted for a large share of the commodities traded in the commodities futures market. The total value of trades in the commodity futures market rose from Rs 50.34 lakh crore in 2008 to Rs 70.90 lakh crore during 2009. The Multi Commodity Exchange, Mumbai, recorded the highest turnover in terms of value of trade during 2009, followed by the National Commodity & Derivatives Exchange Ltd. (NCDEX) and National Multi Commodity Exchange of India Ltd. (NMCE) respectively (Table 8.30).

8.103 During the year 2009-10 (up to December 2009), value of trade in agricultural commodities was about 16.33 per cent. Agricultural commodities, however, accounted for 38 per cent of the total volume of trade. In value terms, bullion accounted for the maximum share of commodity groups followed by energy and metals (Table 8.31).

**Table 8.29 : Production of oilseeds and net availability of edible oils**

(in lakh tonnes)					
Oil year (Nov.-Oct.)	Production of Oilseeds*	Net availability of edible oils from all domestic sources**	Import of edible oils	Total availability/ consumption of edible oils (from domestic & imports sources)	Total estimated requirement/ demand for edible oil
2007-08	297.56	86.54	49.03#	135.57	127.57
2008-09	281.57	85.98	67.20#	153.18	132.80
2009-10 (Estimated)	255.09	82.00	101.00**	183.00	138.18

Source : \* Ministry of Agriculture;

\*\* Directorate of Vanaspati, Vegetable Oils & Fat (Nov.-Oct.);

# DGCI&S, Kolkata (Financial Year).

**Table 8.30 : Turnover on commodity futures markets**

(Rs crore)

Name of the exchange	Calendar year		
	2007	2008	2009
Multi Commodity Exchange, Mumbai	27,30,415	42,84,653	59,56,656
National Commodity and Derivatives Exchange, Mumbai	7,74,965	6,28,074	8,05,720
National Multi Commodity Exchange Ahmedabad	25,056	37,272	1,95,907
Others	1,24,051	83,885	1,32,173
<b>Total</b>	<b>36,54,487</b>	<b>50,33,884</b>	<b>70,90,456</b>

8.104 The Forward Markets Commission (FMC), the regulator for commodity futures trading under the provisions of the Forward Contracts (Regulation) Act, 1952 continued its efforts to broad-base the market. The participation of physical market participants, especially farmers, as hedgers, to counterbalance the speculative element in price discovery and increasing the awareness level of farmers and other market participants was emphasized. The Commission undertook various regulatory measures to facilitate hedgers' participation and promote delivery in agricultural commodities, such as introduction of Exchange of Futures for Physicals (EFP) and Alternate Futures Settlement Mechanism, allowing higher position limits to NAFED to facilitate hedging and delivery by them and introduction of early delivery system in select commodities. In addition, efforts were made to develop an "aggregation" model in collaboration

with commodity exchanges to promote participation of farmers. The FMC also undertook several regulatory initiatives to prevent market manipulation and ensure market integrity, financial integrity and customer protection. Major policy developments initiated by the FMC included the issuance of guidelines for bringing members of the commodity exchanges under the purview of the Money Laundering Act and guidelines for divestment of the equity by the existing national exchanges after five years of their operation. A price dissemination project was initiated by the FMC, under which spot and future prices of agricultural commodities would be made available to farmers on real-time basis on electronic price ticker boards placed at Agriculture Produce Marketing Committee.

### Restoration of futures trade – chana, soy oil, rubber, potato and wheat

8.105 The year 2009 began on an optimistic note for the commodity futures market with the revocation of suspension of futures trading in four of the eight commodities, namely chana, soy oil, rubber and potato, in December 2008. This was followed by the revocation of suspension of trading in wheat in May 2009. However, futures trading in sugar has been suspended till September 30, 2010. Agriculture commodity futures staged a remarkable recovery after steady decline over the last two years, recording a trading value of Rs 10.88 lakh crore in 2009, signifying growth of 48 per cent over the previous year. During the year, a new National Commodity Exchange called Indian Commodity Exchange (ICEX) became operational. Besides, a scheme of upgradation of Ahmedabad Commodity Exchange to National Commodity Exchange status has been approved.

**Table 8.31 : Trade in commodity futures market (volume in lakh tonnes and value in Rs crore)**

Name of the commodity	2007-08		2008-09		2009-10	
	Volume	Value	Volume	Value	Volume	Value
Agricultural Commodities	3,139.03	9,41,283.33	2,309.35	6,27,303.14	2,910.05	9,02,209.31
Bullion	3.46	17,25,952.45	4.19	29,73,674.60	3.36	22,10,133.08
Metals	448.46	8,97,714.34	436.17	6,18,775.61	644.89	11,78,237.54
Energy	1,976.22	5,00,942.14	3,938.17	10,26,442.05	4,088.36	12,32,612.60
Other	6.25	97.22	175.62	2,760.78	2.12	3,103.36
<b>Total</b>	<b>5,573.41</b>	<b>40,65,989.47</b>	<b>6,863.49</b>	<b>52,48,956.18</b>	<b>7,648.79</b>	<b>55,26,295.90</b>

## DEVELOPMENT OF ELECTRONIC SPOT EXCHANGES

8.106 The Government has allowed the National Commodity Exchanges to set up three spot exchanges in the country, namely the National Spot Exchange Ltd. (NSEL), NCDEX spot Exchange Ltd. (NSPOT) and National Agriculture Produce Marketing Company of India Ltd. (NAPMC). During 2009, there was significant expansion of spot exchanges' trading facilities in India. These spot exchanges have created an avenue for direct market linkage among farmers, processors, exporters and end users with a view to reducing the cost of intermediation and enhancing price realization by farmers. They will also provide the most efficient spot price inputs to the futures exchanges. The spot exchanges will encompass the entire spectrum of commodities across the country and will bring home the advantages of an electronic spot trading platform to all market participants in the agricultural and non-agricultural segments. On the agricultural side, the exchanges would enable farmers to trade seamlessly on the platform by providing real-time access to price information and a simplified delivery process, thereby ensuring the best possible price. On the buy side, all users of the commodities in the commodity value chain would have simultaneous access to the exchanges and be able to procure at the best possible price. Therefore the efficiency levels attained as a result of such seamless spot transactions would result in major benefits for both producers and consumers. These Spot Exchanges will also provide a platform for trading of Warehouse Receipts.

## CHALLENGES AND OUTLOOK

8.107 The country has been able to manage one of the most deficient monsoons with concerted efforts of the State Governments and the Centre. Several incentives and concessions allowed to farmers by the States and the Central Government resulted in minimizing the loss in kharif production and maximizing rabi production. Part of the loss in kharif production is expected to be made up in the rabi season. The sector, however, faces various challenges which need to be addressed sooner than later.

8.108 Although the yield per hectare of foodgrains has shown some improvement in recent years it is not significant enough to cater to the needs of the rising population particularly when income levels are also rising. Since farm productivity is not showing desirable growth there is urgent need to focus on research as well as better agricultural practices to

ensure that productivity levels are increased in the shortest time possible. Special attention may be required for States with relatively low productivity.

8.109 Production and productivity in pulses and oilseeds are of growing concern. A sizeable proportion of these items is met through imports. The scope for import of pulses is limited due to the limited number of countries producing it. Due to this supply-demand gap domestic prices fluctuate with availability and prices in the international market apart from the impact of domestic production trends.

8.110 Consistent decline in the share of private-sector investment in the agriculture sector is a matter of concern. This trend needs to be reversed through creation of a favourable policy environment and availability of credit at reasonable rates on time for the private sector to invest in agriculture.

8.111 There has been substantial increase in MSPs of various crops over the last few years. This is considered necessary to incentivize the farmers to increase production and productivity. At the same time, the MSP signals the floor price for the produce which, in turn, has the potential of increasing the prices. Addressing the welfare of agricultural producers and consumers simultaneously poses a challenge. Further, inability of a large number of small and marginal farmers to directly access the agri-market puts a question mark on increases in MSP actually benefiting such farmers.

8.112 Record procurement of rice and wheat in the last few years has helped to build up the buffer stock and strategic reserve of wheat and rice. There is, however, a huge cost involved in the process which is met through budgetary sources in the form of food subsidy. This puts a lot of stress on the fiscal system. The issue of efficient food stocks management and offloading of stocks in time needs urgent attention.

8.113 Studies indicate adverse impact of climate change on agriculture. Crop improvement and research to develop drought-resistant, high-yielding varieties of seeds assumes importance with a view to combating adverse impact of drought on food production and to ensure food security.

8.114 To sum up, we need to address the challenges of the agriculture sector through comprehensive and coordinated efforts. Renewed attention needs to be paid to improving farm production and productivity, better utilization of agricultural inputs, proper marketing infrastructure and support, stepping up investment in agriculture with due emphasis on environmental concerns and efficient food management.