

## Agriculture and Food Management

Agriculture is the mainstay of Indian economy because of its high share in employment and livelihood creation notwithstanding its reduced contribution to the nation's GDP. The share of agriculture in the gross domestic product has registered a steady decline from 36.4 per cent in 1982-83 to 18.5 per cent in 2006-07. Yet this sector continues to support more than half a billion people providing employment to 52 per cent of the workforce. It is also an important source of raw material and demand for many industrial products, particularly fertilizers, pesticides, agricultural implements and a variety of consumer goods. Growth of agriculture over a period of time remained lower than the growth in non-agriculture sectors and this decelerating trend is cause for concern (Table 7.1). The gap between the growth of agriculture and non-agriculture sector began to widen since 1981-82, and more particularly since 1996-97, because of an acceleration in the growth of industry and services sectors.

### AGRICULTURAL PRODUCTION & FOOD AVAILABILITY

7.2 The growth in the agriculture sector, though lower than in the non-agriculture, nonetheless remained higher than the growth of population. Between 1950-51 and 2006-07, production of

foodgrains increased at an average annual rate of 2.5 per cent compared to the growth of population which averaged 2.1 per cent during this period. As a result, India almost became self-sufficient in foodgrains and there were hardly any imports during 1976-77 to 2005-06, except occasionally. The rate of growth of foodgrains production, however, decelerated to 1.2 per cent during 1990-2007, lower than annual rate of growth of population, averaging 1.9 per cent. The per capita availability of cereals and pulses, therefore, witnessed a decline during this period. The consumption of cereals declined from a peak of 468 grams per capita per day in 1990-91 to 412 grams per capita per day in 2005-06, indicating a decline of 13 per cent during this period. The consumption of pulses declined from 42 grams per capita per day (72 grams in 1956-57) to 33 grams per capita per day during the same period.

### Agriculture production in 2006-07 and 2007-08

7.3 The overall production of foodgrains was estimated at 217.3 million tonnes in 2006-07, an increase of 4.2 per cent over 2005-06. Compared to the target set for 2006-07, it was, however, lower by 2.7 million tonnes (1.2 per cent). The increase in production in 2006-07 was largely

**Table 7.1** Average GDP growth rates of agriculture and other sectors at 1999-2000 prices (per cent)

Period	Total economy	Agriculture & allied	Crops & livestock	Non-agriculture	
Pre-Green Revolution	1951-52 to 1967-68	3.7	2.5	2.7	4.9
Green Revolution period	1868-69 to 1980-81	3.5	2.4	2.7	4.4
Wider technology dissemination period	1981-82-1990-91	5.4	3.5	3.7	6.4
Early Reforms period	1991-92 to 1996-97	5.7	3.7	3.7	6.6
Ninth and Tenth Plan	1997-98 to 2006-07	6.6	2.5	2.5	7.9
	2005-06 to 2006-07	9.5	4.8	5.0	10.7

because of higher production of wheat by 6.5 million tonnes (9.3 per cent) and of pulses by 0.8 million tonnes (6 per cent). There was a decline in production of oilseeds (3.7 million tonnes or 13 per cent) compared to the production in 2005-06.

7.4 The production of non-food crops, particularly sugarcane, cotton and jute (including mesta), however, exceeded both the targets and the levels achieved in the previous year. In the current year, as per the second advance estimates of crops' production, a shortfall is expected in rabi crops. The overall foodgrains production in 2007-08 is expected to fall short of the target by 2.2 million tonnes, though it is expected to be 10.1 million tonnes higher compared to the second estimates for 2006-07. Production of sugarcane is estimated to exceed the target, though it will be lower than the previous year. A shortfall of 2.8 million tonnes (10 per cent) is expected in the production of oilseeds compared to the target, though it is still expected to be higher by 2.9 million tonnes compared to the final estimates of 2006-07 (Table 7.2).

7.5 Over a medium term, there has generally been a shortfall in the achievement of target of foodgrains, pulses and oilseeds during 2000-01 to 2006-07. The actual production of foodgrains on an average was 93 per cent of the target. Actual production, however, was only 87.7 per cent of target for pulses and 85.3 per cent of target for oilseeds. Production of sugarcane and cotton, however, overachieved their respective targets in 2005-06 and 2006-07 (Table 7.5).

### Rainfall and reservoir levels

7.6 The rainfall and availability of water for irrigation influence the crop productivity. For the country as a whole, the weighted seasonal rainfall during the south-west monsoon (June-September) 2007 was 5 per cent higher than the long period average (LPA). Southern peninsula experienced the maximum rainfall (26 per cent more) followed by Central India (8 per cent) and North-East India (4 per cent). The North-West India was deficient in rainfall by 15 per cent. Out of 533 meteorological districts, 32 per cent received excess rainfall, 40

**Table 7.2** Agriculture production (million tonnes)

Crop	2003-04	2004-05	2005-06	2006-07			2007-08	
	Final estimates			Target	Second estimates	Final estimates	Target	Second estimates
<b>Rice</b>	<b>88.5</b>	<b>83.1</b>	<b>91.8</b>	<b>92.8</b>	<b>90.1</b>	<b>93.4</b>	<b>93.0</b>	<b>94.1</b>
Kharif	78.6	72.2	78.3	80.8	77.4	80.2	80.0	81.5
Rabi	9.9	10.9	13.5	12.0	12.7	13.2	13.0	12.6
<b>Wheat</b>	<b>72.2</b>	<b>68.6</b>	<b>69.4</b>	<b>75.5</b>	<b>72.5</b>	<b>75.8</b>	<b>75.5</b>	<b>74.8</b>
<b>Coarse Cereals</b>	<b>37.6</b>	<b>33.5</b>	<b>34.1</b>	<b>36.5</b>	<b>32.0</b>	<b>33.9</b>	<b>37.5</b>	<b>36.1</b>
Kharif	32.2	26.4	26.7	28.7	24.5	25.6	28.7	28.6
Rabi	5.4	7.1	7.3	7.8	7.5	8.3	8.8	7.5
<b>Pulses</b>	<b>14.9</b>	<b>13.1</b>	<b>13.4</b>	<b>15.2</b>	<b>14.5</b>	<b>14.2</b>	<b>15.5</b>	<b>14.3</b>
Kharif	6.2	4.7	4.9	5.8	5.2	4.8	5.5	5.8
Rabi	8.7	8.4	8.5	9.4	9.3	9.4	10.0	8.6
<b>Total Foodgrains</b>	<b>213.2</b>	<b>198.4</b>	<b>208.6</b>	<b>220.0</b>	<b>209.2</b>	<b>217.3</b>	<b>221.5</b>	<b>219.3</b>
Kharif	117.0	103.3	109.9	115.3	107.2	110.6	114.2	115.9
Rabi	96.2	95.1	98.7	104.8	102.0	106.7	107.3	103.4
<b>Total Oilseeds</b>	<b>25.2</b>	<b>24.4</b>	<b>28.0</b>	<b>29.4</b>	<b>23.6</b>	<b>24.3</b>	<b>30.0</b>	<b>27.2</b>
Kharif	16.7	14.1	16.8	18.1	13.7	14.0	18.5	17.6
Rabi	8.5	10.2	11.2	11.3	9.9	10.3	11.5	9.6
Sugarcane	233.9	237.1	281.2	270.0	315.5	355.5	310.0	340.3
Cotton <sup>a</sup>	13.7	16.4	18.5	18.5	21.0	22.6	22.0	23.4
Jute and Mesta <sup>b</sup>	11.2	10.3	10.8	11.3	11.4	11.3	11.0	11.3

Source: Ministry of Agriculture, Government of India.

<sup>a</sup> Million bales of 170 kg each.

<sup>b</sup> Million bales of 180 kg each.

**Table 7.3 Monsoon performance - 2000 to 2007 (June-September)**

Year	Number of meteorological subdivisions			Percentage of districts with normal/excess rainfall	Percentage of rainfall relative to LPA
	Normal	Excess	Deficient/Scanty		
2000	23	5	8	66	91
2001	30	1	5	68	91
2002	14	1	21	39	81
2003	26	7	3	75	102
2004	23	0	13	56	87
2005	23	9	4	72	99
2006	20	6	10	60	99
2007	17	13	6	72	105

per cent normal, 24 per cent deficient and the remaining 4 per cent scanty rainfall. The rainfall was not uniformly distributed over time and there were significant variations relative to LPA (Table 7.3). The cumulative post-monsoon rainfall from October 1 to December 31, 2007, was excess to normal in 9 meteorological subdivisions and deficient/scanty in the remaining 27 meteorological subdivisions in the country.

7.7 The Central Water Commission (CWC) monitors storage of 81 important reservoirs having their live storage capacity at full reservoir level (FRL) of 151.8 billion cubic metres (BCM). At the end of monsoon 2007, the total water availability in these reservoirs was 124.2 BCM which was about 7 per cent less than the storage of 133.4 BCM at the end of monsoon 2006, but

higher than the average of the last 10 years by 24 BCM (Table 7.4). The storage is considered quite favourable from the viewpoint of hydroelectricity generation as well as *rabi* crops.

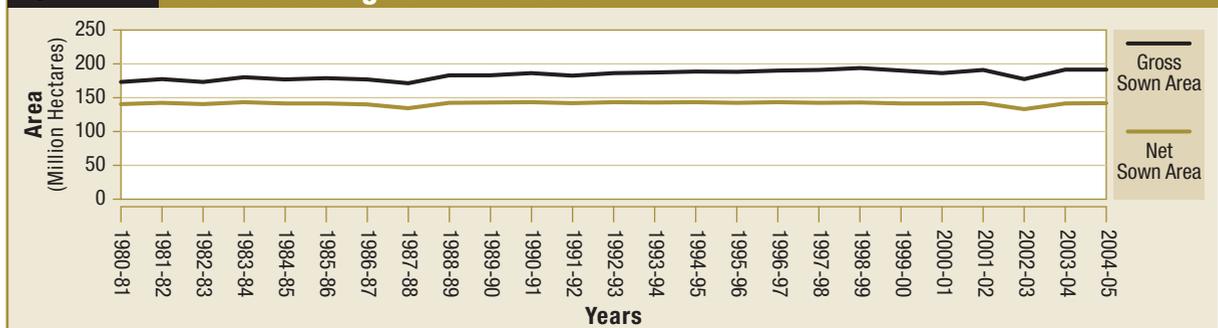
**Raising agriculture production — approach**

7.8 The production of agriculture crops, besides the weather induced fluctuations, significantly depends on the availability of inputs like fertilizers, irrigation, certified seeds, credit support and appropriate price signals. Minimum support prices indicated upfront and before the sowing seasons act as effective incentives for acreage response of the agricultural crops. Deviations in foodgrains and agricultural output from their long-term trends are determined, among

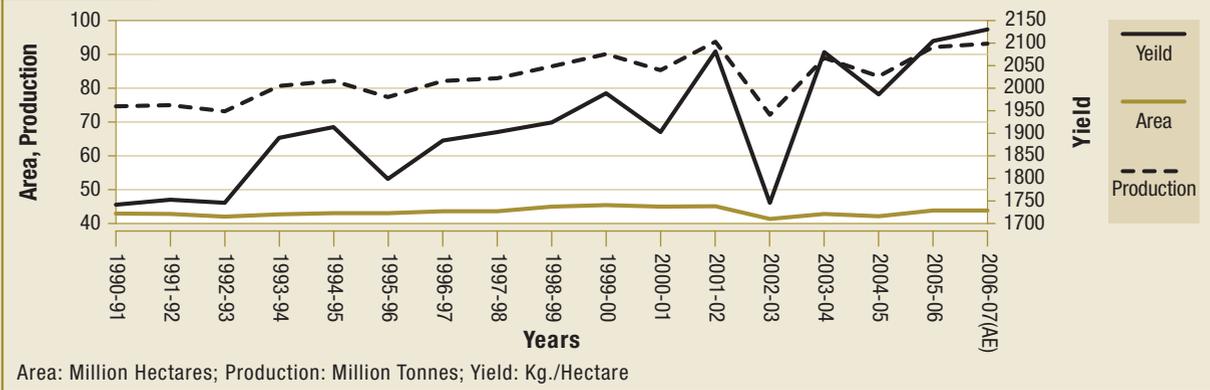
**Table 7.4 Reservoir storage**

	2006		2007		Average of last 10 years	
	Storage Percentage		Storage Percentage		Storage Percentage	
	BCM	FRL	BCM	FRL	BCM	FRL
Beginning of monsoon (June 1)	31.2	20.5	31.1	20.5	20.5	13.5
End of monsoon (September 30)	133.4	87.9	124.2	81.8	99.9	65.8
Increase in storage	102.2	67.3	93.0	61.3	79.5	52.4

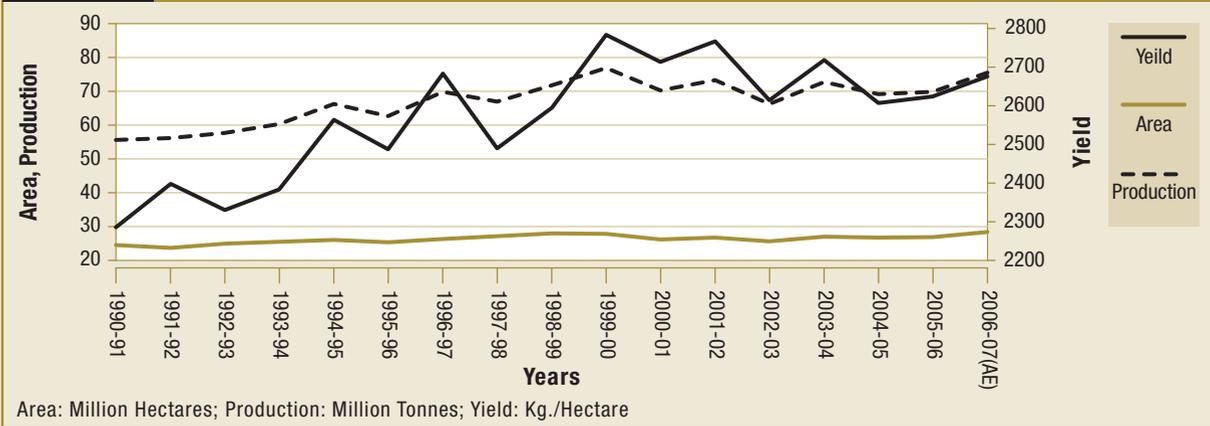
**Figure 7.1 Selected categories of land use**



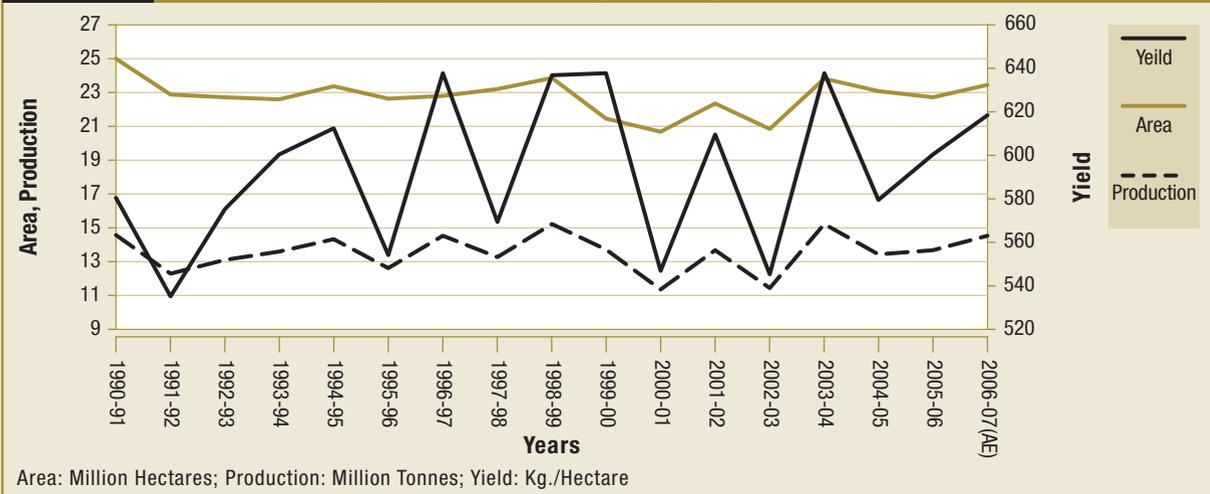
**Figure 7.2 All-India area, production and yield of rice**



**Figure 7.3 All-India area, production and yield of wheat**



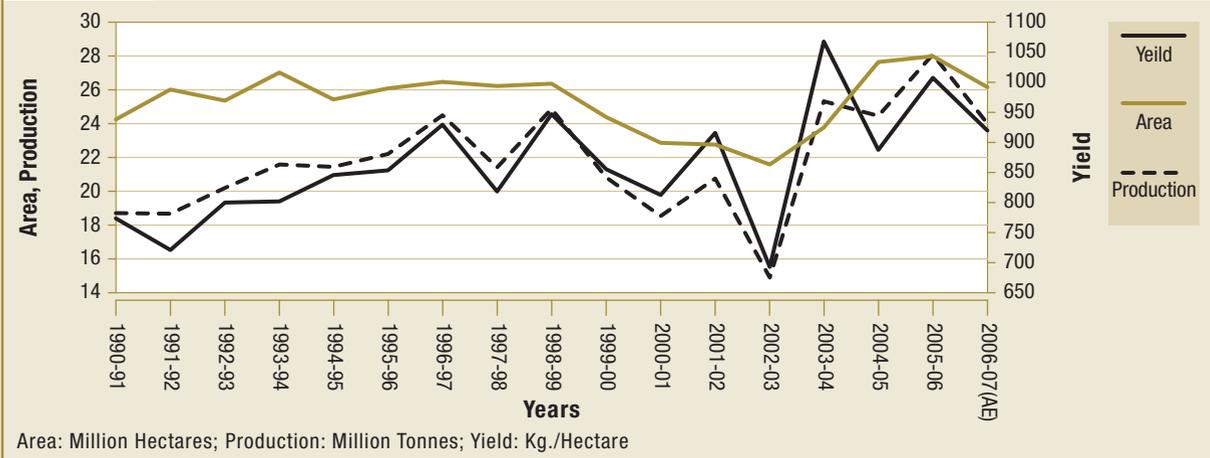
**Figure 7.4 All-India area, production and yield of pulses**



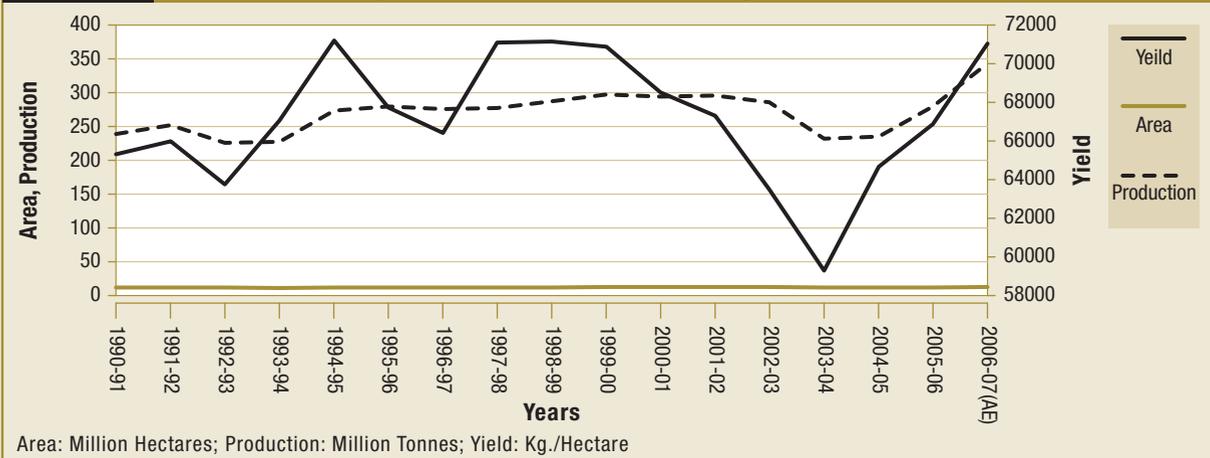
other factors, by variations in monsoon around its long-term trend and the area under irrigation. Since increase in net sown area has flattened out (Figure 7.1), further increase in agriculture production

needs to come through an increase in gross cropped area (multiple cropping), coverage of area under irrigation and improvement in the productivity levels (Figures 7.2 to 7.7). The Planning

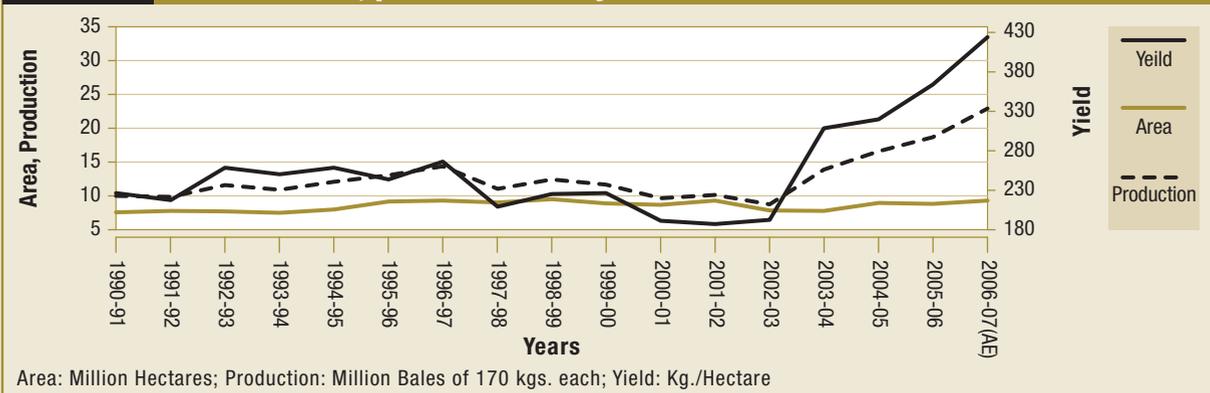
**Figure 7.5 All-India area, production and yield of oilseeds**



**Figure 7.6 All-India area, production and yield of sugarcane**



**Figure 7.7 All-India area, production and yield of cotton**



Commission has made an assessment of trend growth of various parameters that contribute to agricultural growth. Except for an increase in the rate of growth of credit supply to farmers, there

has been a deceleration in the growth of all the other variables/factors (Table 7.6).

7.9 There has been a considerable decline in the rate of growth of area, production,

**Table 7.5** Actual production relative to targets (per cent)

Crop	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	Average (2001-07)
Rice	101.5	77.2	95.2	88.9	104.5	100.6	94.7
Wheat	93.3	84.3	92.5	86.3	91.8	100.4	91.4
Coarse cereals	101.1	79.0	110.6	90.9	93.3	92.9	94.6
Pulses	89.1	69.6	99.4	85.8	88.4	93.7	87.7
Foodgrains	97.6	79.4	96.9	88.1	97.0	98.8	93.0
Oilseeds	37.8	55.0	102.0	93.0	105.2	82.6	85.3
Sugarcane	91.4	89.8	73.1	87.8	118.4	131.7	98.7
Cotton	68.9	57.5	91.5	109.5	112.1	122.3	93.7
Jute & mesta	106.2	94.0	93.1	87.1	96.1	99.9	96.1

**Table 7.6** Trend growth rate in area, input use, credit and capital stock in agriculture during 1980-81 to 2003-04 (per cent/year)

Period	1980-81 to 1990-91	1990-91 to 1996-97	1996-97 to 2005-06
Technology <sup>a</sup>	3.3	2.8	0.0
Public sector net fixed capital stock	3.9	1.9	1.4 <sup>b</sup>
Gross irrigated area	2.3	2.6	0.5 <sup>b</sup>
Electricity consumed in agriculture	14.1	9.4	-0.5 <sup>c</sup>
Area under fruits and vegetables	5.6	5.6	2.7 <sup>c</sup>
Private sector net fixed capital stock	0.6	2.2	1.2 <sup>b</sup>
Terms of trade	0.2	1.0	-1.7 <sup>b</sup>
Total net fixed capital stock	2.0	2.1	1.3 <sup>b</sup>
NPK use	8.2	2.5	2.3
Credit supply	3.7	7.5	14.4 <sup>b</sup>
Total cropped area	0.4	0.4	-0.1
Net sown area	-0.1	0.0	-0.2
Cropping intensity	0.5	0.4	0.1

<sup>a</sup> Yield potential of new varieties of paddy, rapeseed/mustard, groundnut, wheat, maize

<sup>b</sup> Up to 2003-04. <sup>c</sup> Up to 2004-05

**Box 7.1** Methodology of estimating area and production of agricultural crops

The period of an agricultural crop year is from July to June, during which various farm operations from preparation of seedbed, nursery, sowing, transplanting various inter-culture operations, harvesting, threshing, etc., are carried out. Final estimates of production based on complete enumeration of area and yield through crop cutting experiments become available much after the crops are actually harvested. However, considering the genuine requirement of crop estimates much before the crops are harvested for various policy purposes, a time schedule of releasing the advance estimates has been drawn.

- (i) **First advance estimates** of area and production covering only the *kharif* crops is prepared in September every year, when the south-west monsoon season is about to be over and *kharif* crops are at an advanced stage of maturity. This is based on assessment made by the State Governments and the reports from the field offices. These are validated on the basis of inputs from the Crop Weather Watch Group (CWWG), and other feedback, such as availability of water in major reservoirs, availability/supply of inputs including credit to farmers, rainfall, temperature, irrigation, etc.
- (ii) **Second advance estimates** is made in the month of January every year. These estimates cover the second assessment in respect of *kharif* crops and the first assessment in respect of *rabi* crops.
- (iii) **Third advance estimates** are prepared towards the end of March/beginning of April every year. In these estimates, the earlier advance estimates of both *kharif* and *rabi* seasons are firmed up/validated based on the information available with the State Agricultural Statistical Authorities (SASAs) of area coverage and crop cutting experiments, remote sensing data as well as the proceedings of CWWG.
- (iv) **Fourth advance estimates** are prepared in the month of June/July every year. By this time, most of the *rabi* crops get harvested and SASAs are in a position to supply the estimates of both *kharif* and *rabi* seasons. Like the third advance estimates, the fourth advance estimates are duly validated with the information available from other sources.
- (v) **Final estimates** are made in December/January of the following agricultural year and are based on crop-cutting experiments and actual area coverage.

productivity and area irrigated for the major crops (Table 7.7).

7.10 The area under the production of foodgrains over a 16-year period witnessed an average annual decline of 0.26 per cent during 1989-90 to 2005-06, largely because of a shift in area away from coarse grains. The trend, however, was moderately reversed during 2002-06, partly because of a low base. Cotton and oilseeds also witnessed an increase in area during the period. Average annual rate of growth in production and yield varied across crops and over different time periods. For cotton and oilseeds, the rate of growth in production remained high during 2002-06 (Tenth Five Year Plan period), while in case of wheat and sugarcane, annual growth in production peaked during the Eighth Five Year Plan period. Rice maintained a positive growth in yield during this period, but in case of wheat, average annual growth in yield during 2002-06 was negative. Growth of productivity in pulses fluctuated over the three Plan periods. It became negative during 1997-2002 (Ninth Five Year Plan period), but turned positive again during the Tenth Five Year Plan. Increase in production and productivity of cotton during the Tenth Five Year Plan may be due to increased use of BT cotton (Table 7.7).

7.11 Productivity of crops in India is not only

low relative to other countries, there are considerable inter-state variations. The productivity of wheat in 2005-06 varied from a low of 1,393 kg per ha in Maharashtra to a high of 4,179 kg in Punjab. The Steering Committee on Agriculture for the Eleventh Five Year Plan has observed that not only the yields differed across the States, there was a significant gap between the performance and potential as revealed by actual yield and yield with improved practices adopted by farmers (Table 7.8).

### Support prices

7.12 The Commission for Agricultural Costs & Prices (CACP) recommends the Minimum Support Prices (MSPs) for 24 important crops. The Commission, apart from other factors, considers the cost of production which includes the cost of paid-out inputs, imputed value of family labour and rentals for the own land while recommending MSP. The MSPs are normally announced upfront before the commencement of sowing operations of the particular crop and have usually been remunerative and significantly higher than the cost. The MSP, by definition, becomes the floor price and farmers are assured of getting that price. In most of the crops, the MSP inclusive of bonus has been above the

**Table 7.7** Rate of growth of area, production, yield and area under irrigation for major crops

	Rice	Wheat	Pulses	Foodgrains	Cotton	Oilseeds	Sugarcane
<b>Growth in the area under crops (per cent)</b>							
1989-90 to 2006-07	0.14	0.73	-0.35	-0.26	0.86	-0.02	1.15
1992-93 to 1996-97	0.46	1.51	-0.33	0.17	4.04	0.56	2.60
1997-98 to 2001-02	0.34	-0.15	-1.82	-0.57	-1.26	-3.38	1.77
2002-03 to 2005-06	-0.29	1.09	2.06	0.55	1.26	5.62	-1.67
<b>Growth in the production (per cent)</b>							
1989-90 to 2006-07	1.17	1.90	-0.03	1.18	2.04	1.25	1.13
1992-93 to 1996-97	1.73	3.60	0.66	1.88	4.88	3.57	3.74
1997-98 to 2001-02	1.13	1.26	-2.52	0.67	-5.79	-4.68	1.23
2002-03 to 2005-06	1.75	0.42	3.27	1.61	20.22	9.81	-1.23
<b>Growth in yield (per cent)</b>							
1989-90 to 2006-07	1.02	1.16	0.32	1.43	1.17	1.24	-0.04
1992-93 to 1996-97	1.27	2.06	1.01	2.05	0.77	2.96	1.14
1997-98 to 2001-02	0.75	1.41	-0.76	1.23	-4.56	-1.38	-0.53
2002-03 to 2005-06	2.10	-0.66	1.25	1.09	18.48	4.11	0.36
<b>Growth in area under irrigation (per cent)</b>							
1989-90 to 2006-07	1.33	1.42	1.85	1.25	0.88	-0.28	1.94
1992-93 to 1996-97	1.97	2.18	3.57	1.74	5.24	2.00	2.73
1997-98 to 2001-02	1.26	0.34	0.78	0.91	-2.46	-4.80	2.38
2002-03 to 2004-05	-1.86	1.03	5.11	-0.06	-4.34	7.35	-4.70

Note: All growth rate are based on moving averages of three years.

Source : Agricultural Statistics of India, 2007

**Table 7.8 State-wise performance and potential yield of selected crops**

State	Improved practice(I)	Farmer practice(F)	Actual yield 2003-04(A)	Gap (per cent)	
				I and F	I and A
In kg/ha					
Wheat (Yield : Kg/ha - 2002-03 to 2004-05)					
Bihar	3651	2905	1783	25.7	104.8
Madhya Pradesh	3297	2472	1789	33.4	84.3
Uttar Pradesh	4206	3324	2794	26.5	50.5
Rice (irrigated) (Yield : Kg/ha - 2003-04 to 2004-05)					
Uttar Pradesh	7050	5200	2187	35.6	222.4
Bihar	4883	4158	1516	17.4	222.1
Chhattisgarh	3919	3137	1455	24.9	169.4
Sugarcane					
Maharashtra	127440	99520	51297	28.1	148.4
Karnataka	147390	128000	66667	15.1	121.2
Bihar	74420	49440	40990	50.5	81.6

cost of production. MSPs were revised substantially in 2007-08. Increase in the MSPs for paddy (common), wheat, moong, urad, arhar, jute in 2007-08, over the MSP for 2004-05, was 33 per cent, 56.3 per cent, 23.4 per cent, 23.4 per cent, 14.4 per cent and 18.5 per cent, respectively. The purchase price offered to farmers, particularly in the efficiently producing States, usually is significantly higher than the cost of production.

### Irrigation

7.13 The Government has also been creating irrigation potential through public funding and assisting farmers to create potential on their own farms. Substantial irrigation potential has been

created through major, medium and minor irrigation schemes. The total irrigation potential in the country has increased from 81.1 million ha in 1991-92 to 102.8 million ha in 2006-07. The potential created so far is estimated to be 73.5 per cent of the ultimate irrigation potential (Table 7.9). Of the total potential created, however, only 87.2 million ha (84.9 per cent) is actually utilized.

7.14 The pace of creation of additional irrigation potential came down sharply from an average of about 3 per cent per annum during 1950-51—1989-90 to 1.2 per cent, 1.7 per cent and 1.8 per cent per annum, respectively, during the Eighth, Ninth and Tenth Five Year Plan periods. The rate of growth of utilization of the potential created

**Table 7.9 Irrigation potential created and utilized (million ha)**

	1991-92	1992-97	1997-2002	2002-07	Annual rate of growth (%)		
		Eighth Plan	Ninth Plan	Tenth Plan	Eighth Plan	Ninth Plan	Tenth Plan
<b>Cumulative potential created (million ha)</b>							
Major and medium	30.7	33.0	37.1	42.4	1.4	2.4	2.7
Minor	50.4	53.3	56.9	60.4	1.1	1.3	1.2
<b>Total</b>	<b>81.1</b>	<b>86.3</b>	<b>94.0</b>	<b>102.8</b>	<b>1.2</b>	<b>1.7</b>	<b>1.8</b>
<b>Cumulative potential utilized (million ha)</b>							
Major and medium	26.3	28.4	31.0	34.4	1.6	1.7	2.1
Minor	46.5	48.8	50.0	52.8	0.9	0.5	1.1
<b>Total</b>	<b>72.9</b>	<b>77.2</b>	<b>81.0</b>	<b>87.2</b>	<b>1.2</b>	<b>1.0</b>	<b>1.5</b>
<b>Per cent utilization</b>							
Major and medium	85.6	86.3	83.7	81.3			
Minor	92.4	91.5	87.9	87.4			
<b>Total</b>	<b>89.8</b>	<b>89.5</b>	<b>86.2</b>	<b>84.9</b>			

declined to 1 per cent per annum during the Ninth Five Year Plan period and improved to 1.5 per cent per annum during the Tenth Five Year Plan period. The average annual rate of utilization remained lower than the average annual addition to the irrigation potential resulting in the cumulative utilization witnessing a continuous erosion. This not only amounts to an inefficient use of funds, but also a forgone income from irrigated lands.

7.15 Responding to the continuous decline in the rate of creation in irrigation potential, the Central Government initiated the Accelerated Irrigation Benefit Programme (AIBP) from 1996-97 for extending assistance in completion of irrigation schemes which had remained incomplete (Table 7.10). Under this programme, the projects approved by the Planning Commission were eligible for assistance. Further, the assistance, which was entirely a loan from the Centre in the beginning, was modified with inclusion of a grant component from 2004-05. The AIBP guidelines were further modified in December 2006 to provide for 90 per cent of the project cost as grant to special category States, DPAP/Tribal areas and KBK (Koraput, Bolangir and Kalahandi) districts of Orissa.

7.16 Under AIBP, the State Governments were provided Rs. 24,867.4 crore as CLA/grant for 229 major/medium Irrigation projects and 6,205 Surface Minor Irrigation (MI) Schemes up to January 29, 2008. So far 91 major/medium and 4,605 surface MI Schemes have been completed. In the current

year, as on January 29, 2008, Rs. 3,127.5 crore has been released for AIBP.

7.17 To cover a larger area under irrigation, the Government sanctioned a National Project for Repair, Renovation and Restoration of Water Bodies directly linked to agriculture, in January 2005 with an estimated cost of Rs. 300 crore to be shared by the Centre and States in 3:1 ratio. The water bodies having cultivated command area of more than one ha and up to 2,000 ha were included under the pilot scheme in one or two districts in each State. The scheme was approved for 26 districts in 15 States. Central share of Rs. 179.3 crore has been released to the States till November 30, 2007, covering 1,098 water bodies. The physical work for restoration has been completed for 733 water bodies and the work is in progress in the remaining 365 water bodies.

7.18 Following the pilot scheme, restoration of water bodies has also been taken up in States having considerable number of water bodies with the World Bank assistance. The World Bank Loan Agreement has been signed with Tamil Nadu for Rs. 2,182 crore to restore 5,763 water bodies having a cultivated command area (CCA) of 4 lakh ha. The Rs. 835 crore Andhra Pradesh Community-Based Tank Management Project was signed with the World Bank in June 2007 for restoration of 3,000 water bodies with a CCA of 2.5 lakh ha. The project of Karnataka was signed for Rs. 259 crore with the World Bank in November 2007 for restoration of 1,225 water bodies involving a CCA of 0.52 lakh ha. The proposals from Orissa and West Bengal Governments have also been submitted to the World Bank.

7.19 Irrigation is one of the six components for the development of rural infrastructure under the Bharat Nirman and aims at creating the irrigation potential of 10 million ha by 2008-09. The target under Bharat Nirman is to be met largely through the completion of ongoing major and medium irrigation projects/schemes. During 2005-06 and 2006-07, 1.68 million ha and 1.94 million ha of irrigation potential, respectively, is reported to have been created.

**Capital formation in agriculture**

7.20 Productivity increase in agriculture is also considerably dependent on capital formation both from the public and private sectors. Gross capital

**Table 7.10 Performance of AIBP Projects (Rs. crore; area thousand ha)**

Year	Central loan assistance / grant released	Total potential created under AIBP	Total potential created
1996-97	500.0	74.5	560.0
1997-98	952.2	182.0	645.2
1998-99	1119.2	259.0	592.2
1999-2000	1450.5	223.2	666.0
2000-01	1856.2	528.8	983.5
2001-02	2602.0	442.8	1214.6
2002-03	3061.7	456.0	812.0
2003-04	3128.5	447.0	1004.0
2004-05	2867.3	496.0	1000.0 <sup>a</sup>
2005-06	1900.3	600.0	1500.0 <sup>a</sup>
2006-07 <sup>a</sup>	2302.0	932.0	
<b>Total</b>	<b>21739.9</b>	<b>4641.3</b>	

<sup>a</sup>Estimated

**Table 7.11 Gross capital formation in agriculture (at 1999-2000 prices)**

	GCF total	GCF in agriculture	Share of agriculture in total GCF (%)	GDP agriculture	GCF/GDP in agriculture (%)
1999-2000	506244	43473	8.6	409660	10.6
2000-01	488658	39027	8.0	407176	9.6
2001-02	474448	48215	10.2	433475	11.1
2002-03	555287	46823	8.4	398206	11.8
2003-04	665625	44833	6.7	441360	10.2
2004-05	795642	49108	6.2	441183	11.1
2005-06	950102	54905	5.8	468013	11.7
2006-07	1053323	60762	5.8	485937	12.5

formation (GCF) in agriculture as a proportion to the total capital formation has shown a continuous decline. GCF in agriculture relative to GDP in this sector has, however, shown an improvement from 9.6 per cent in 2000-01 to 12.5 per cent in 2006-07. This, however, needs to be raised to 16 per cent during the Eleventh Five Year Plan to achieve the target growth of 4 per cent in this sector (Table 7.11).

### Credit support to agriculture

7.21 The "Farm Credit Package" announced in June 2004 stipulated, among other things, doubling the flow of institutional credit for agriculture in the ensuing three years. The credit flow to the farm sector got doubled during two years as against the stipulated time period of three years. The details regarding the progress of agency-wise credit flow to agriculture and allied sectors is given in (Table 7.12).

### Kisan Credit Card

7.22 To provide adequate and timely support from the banking system to the farmers for their cultivation needs including purchase of all inputs in a flexible and cost-effective manner, a Kisan Credit Card (KCC) Scheme was introduced in

August 1988 for short- and medium-term loans. NABARD had advised banks to extend coverage through expanding their outreach by lending to more farmers including non-wilful defaulters, oral lessees, tenant farmers, sharecroppers, who may have been outside the fold of the scheme, as also new farmers. About 705.55 lakh KCCs have been issued up to November 2007. Further, from January 31, 2006, the scheme has been extended to all types of loan requirements of borrowers of State Cooperative Agriculture Rural Development Banks (SCARDBs). It covers short-term/medium-term credit and long-term credit and a reasonable component of consumption credit within the overall limit sanctioned to the borrowers.

### Rate of interest on agricultural loan

7.23 From *kharif* 2006-07, it was decided that the farmers would receive crop loans up to a principal amount of Rs. 3 lakh at 7 per cent rate of interest and the Government of India would provide necessary interest subvention to NABARD and banks for this purpose. This policy has been continued in 2007-08 also. For this purpose the Government has made a provision of Rs. 1,677 crore in the Union Budget 2007-08.

**Table 7.12 Institutional credit flow to agriculture sector (Rs. crore)**

Agency	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08 <sup>a</sup>
Cooperatives	23716	26959	31424	39404	42480	33070
RRBs	6070	7581	12404	15223	20435	15925
Commercial Banks	39774	52441	81481	125859	140382	88765
<b>Total</b>	<b>69560</b>	<b>86981</b>	<b>125309</b>	<b>180486</b>	<b>203297</b>	<b>137760</b>

<sup>a</sup>Up to November 2007.

**Revamping of cooperative credit structure**

7.24 In January 2006, the Government announced a package for revival of Short-term Rural Cooperative Credit Structure involving financial assistance of Rs. 13,596 crore. NABARD has been designated as the implementing agency for the purpose. A Department for Cooperative Revival and Reforms has been set up in NABARD for facilitating the implementation process. States are required to sign a Memorandum of Understanding (MoU) with NABARD committing to implement the legal, institutional and other reforms as envisaged in the revival package. So far, 21 States and 3 UTs have agreed to implement the package; out of which 17 States (Andhra Pradesh, Arunachal Pradesh, Bihar, Chhattisgarh, Gujrat, Haryana, Madhya Pradesh, Maharashtra, Rajasthan, Orissa, Uttarakhand, Uttar Pradesh, Tripura, Nagaland, Tamil Nadu, Punjab and West Bengal) have signed the MoU with the Government of India and NABARD. A total amount of Rs. 1,073 crore has been released by NABARD as Government of India’s share under the package to Andhra Pradesh, Madhya Pradesh and Haryana. The Task Force has also submitted its report for revival of Long Term Cooperative Credit Structure. The report has been forwarded to the State Governments for their comments. A financial package for revival of long-term cooperative credit structure would be developed based on their comments.

**Agriculture insurance**

7.25 Climatic variability caused by erratic rainfall pattern, and increase in the severity of droughts,

floods and cyclones and rising temperatures, have been the causes of uncertainty and risk resulting in huge losses in agricultural production and the livestock population in India. The National Agricultural Insurance Scheme (NAIS) for crops has been implemented from *rabi* 1999-2000 season with the objective of providing insurance coverage in the event of failure of any of the notified crops as a result of natural calamities, pests and diseases. The scheme is available to all the farmers (both loanee and non-loanee) irrespective of their size of holding and operates on the basis of “Area Approach” It envisages coverage of all the food crops (cereals, millets and pulses), oilseeds and other commercial/ horticultural crops in respect of which past yield data are available for adequate number of years. At present, 10 per cent subsidy in premium is available to small and marginal farmers, which is to be shared equally by the Centre and State Governments. The scheme is implemented by 23 States and 2 Union Territories. Since the inception of the scheme and until *rabi* 2006-07, about 971 lakh farmers have been covered. The coverage area is 156 million ha and the sum insured is Rs. 92,618 crore. Claims to the tune of about Rs. 9,855 crore have become payable against the premium income of about Rs. 2,943 crore benefiting nearly 270 lakh farmers (Table 7.13).

**Redesigning of the insurance scheme**

7.26 Despite high claims ratio (1:3.3) and low premium rates, particularly for food and oilseeds crops, farmers (particularly non-loanee farmers) are not coming forward to avail of crop insurance in a big way. To overcome some of the limitations

**Table 7.13 Season-wise details of coverage under the scheme of NAIS**

(number of farmers in lakh, area in lakh ha and sum assured, premium paid and claims in Rs. crore)

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
<b>Rabi crop</b>						
No. of farmers	19.6	23.3	44.2	35.3	40.5	49.8
Area covered	31.5	40.4	64.7	53.4	72.2	76.3
Sum insured	1497.5	1837.6	3049.5	3774.2	5071.7	6592.6
Premium paid	30.2	38.5	64.1	75.9	104.8	142.9
Claims	64.7	188.6	497.1	160.6	338.3	477.0
<b>Kharif crop</b>						
No of farmers	87.0	97.7	79.7	126.9	126.7	129.3
Area covered	128.9	155.3	123.6	242.7	205.3	196.7
Sum insured	7502.5	9431.7	8114.1	13170.5	13517.3	14759.1
Premium paid	261.6	325.5	283.3	458.9	449.9	467.3
Claims	493.5	1824.3	652.7	1037.9	1059.9	1771.6

and to make the scheme more farmer-friendly, a Joint Group was constituted to study the improvements required in the existing crop insurance schemes. The Group made an in-depth study and has made important recommendations like reduction in the unit area of insurance to Gram Panchayat for major crops, improving the basis of calculation of threshold yield, higher indemnity level coverage of pre-sowing/planting risks and post-harvest losses, personal accident insurance cover, etc. Based on the recommendations of the Joint Group and views/comments of various stakeholders, modification of the existing NAIS is under consideration of the Government.

### **Pilot Scheme for Weather-based Crop Insurance**

7.27 As announced in the Union Budget for 2007-08, the Weather-based Crop Insurance Scheme (WBCIS) was implemented in the selected areas of Karnataka on a pilot basis. WBCIS intends to provide insurance protection to farmers against adverse incidence, such as deficit and excess rainfall which are deemed to impact adversely the crop production. It has the advantage to settle the claims within the shortest possible time. The WBCIS is based on actuarial rates of premium but to make the scheme attractive, premium actually charged from farmers has been restricted to "at par" with NAIS. The Agriculture Insurance Company of India Ltd. (AIC) has implemented the pilot WBCIS in Karnataka during *khari* 2007 season, covering eight rain-fed crops, insuring crops on nearly 50,000 ha for a sum insured of Rs. 50 crore. WBCIS is being implemented in 2007-08 on a larger scale in selected areas of 12 States for *rabi* 2007-08 season. In addition to AIC, private insurers like ICICI-LOMBARD General Insurance Company and IFFCO-TOKIO General Insurance Company have also been included for selected areas.

### **Rehabilitation package for distressed farmers**

7.28 The Government of India has approved a rehabilitation package of Rs. 16,978.7 crore for 31 suicide-prone districts in the four States of Andhra Pradesh, Maharashtra, Karnataka and Kerala. The package will be implemented over a period of three

years and includes both immediate and medium-term measures. The rehabilitation package aims at establishing a sustainable and viable farming and livelihood support system through debt relief to farmers, improved supply of institutional credit, crop-centric approach to agriculture, assured irrigation facilities, watershed management, better extension and farming support services and subsidiary income opportunities through horticulture, livestock, dairying, fisheries, etc. So far an amount of Rs. 3,728.4 crore of interest on overdue loans has been waived by the banks and Rs. 10,086.6 crore (as on December 31, 2007) has been released to Andhra Pradesh, Maharashtra, Karnataka and Kerala under the package.

### **Availability of other inputs for agriculture**

7.29 The availability of inputs remains critical for agriculture production. The Government has been conscious of improving the access of farmers to better quality seeds, chemical fertilizers and pesticides and ensuring availability and affordability of these inputs to the farmers (Table 7.14).

7.30 Seed, as the carrier of new technology for crop production and higher crop yields, is a critical input for sustained growth of agriculture. More than 80 per cent of the farmers rely on farm-saved seeds leading to a low seed-replacement rate. The Indian Seed Programme engages the Central and State Governments, Indian Council of Agricultural Research (ICAR), State agricultural universities, and the cooperative and private sectors in its programme. There are 14 State Seed Corporations (SSCs) besides two national-level corporations. Though the private sector has begun to play a significant role in production and distribution of seed, particularly after the introduction of the Seed Policy of 1988, the organized seed sector, particularly for food crops and cereals, continues to be dominated by the public sector. However, it is estimated that about 46 per cent of the seed commercially sold in the country is by the private seed companies. The annual rate of growth of certified/quality seeds distribution is expected to accelerate from 12.1 per cent in 2005-06 to 18.1 per cent in 2006-07. During 2006-07, 73,830 quintal breeder seed was anticipated to be produced by the National Agricultural Research System.

**Table 7.14** Production and use of agricultural inputs

Programme	1991-92	2000-01	2004-05	2005-06	2006-07
Production and distribution of seeds (000 quintals)					
Breeder seeds	34.90	42.69	66.46	68.65	73.83
Foundation seeds	375	591	690	740	790
Distribution of quality seeds	5750	8627	11310	12675	15501
Consumption of chemical fertilizers (lakh tonnes)					
Nitrogenous (N)	80.46	109.20	117.13	127.23	140.48
Phosphatic (P)	33.21	42.15	46.24	52.04	56.63
Potassic (K)	13.61	15.67	20.61	24.13	23.34
Total (N+P+K)	127.28	167.02	183.98	203.40	220.45
Per hectare (kg)	69.84	89.63	96.59	104.50	113.26
Consumption of pesticides (000 tonnes)					
<b>Pesticides</b> (technical grade)	72.13	43.58	40.67	39.77	37.95
Area under soil conservation (million ha)					
<b>Soil conservation</b>	35.70	39.47	39.80	NA	NA

7.31 To increase the use of chemical fertilizers, the farm gate prices of fertilizers have been kept unchanged. Per hectare consumption of fertilizers has increased from 69.8 kg in 1991-92 to 113.3 kg in 2006-07 at an average rate of 3.3 per cent. Current fertilizer policy subsidizes 15 types of fertilizers, which largely provide NPK (major nutrients) by fixing Maximum Retail Prices (MRPs). Regulatory controls on production, distribution, products and prices results in elimination of market forces and often encourages rent seeking. A large proportion of fertilizer subsidy goes to the fertilizer units, which is paid on a (group based) cost plus basis. Although 60 per cent of fertilizer production is gas-based, due to non-availability of natural gas in adequate measure, some of these units through dualistic option use naphtha, which is a costlier feedstock. The current system has allowed the inefficient units to persist. The current pricing mechanism of fertilizers has also encouraged nutrient imbalance. There is excessive use of urea and a bias against micronutrients. As against the desirable NPK proportion of 4:2:1, the average use is 6:2.4:1. The Steering Committee of the Planning Commission has observed that "because nitrogenous fertilizers are subsidized more than potassic and phosphatic fertilizer, the subsidy tends to benefit more the crops and regions which require higher use of nitrogenous fertilizer as compared to crops and regions which require higher application of P and K." The excessive use of urea has also affected the soil profile adversely.

7.32 A healthy plant growth is possible only if all 16 nutrients are available in soil. Besides NPK,

sulphur, zinc and calcium are also required in good quantity. Other nutrients such as iron, boron, etc., are also required in small quantities, but their deficiency significantly impacts plant growth and life. Micronutrients are best applied through fortification of major fertilizers. However, restrictions of MRP, as well as fixed subsidy, afford no incentive for such fortification. As a result, though NPK requirements are partly made good, micronutrient deficiency continues to affect the productivity of crops significantly.

### Agricultural marketing

#### Reforms through APMC Act

7.33 Agriculture sector needs well functioning markets to drive growth, employment and economic prosperity in rural areas of the country. To provide dynamism and efficiency into the marketing system, large investments are required for the development of post-harvest and cold chain infrastructure nearer to the farmers' fields. Accordingly, the Ministry of Agriculture circulated a model Agriculture Produce Marketing Committee (APMC) Act, 2003, and suggested amendments to the State APMC Acts so as to promote investment in marketing infrastructure, motivating corporate sector to undertake direct marketing and to facilitate a national integrated market. With a view to facilitate the States in the drafting of modified Rules under the amended Acts, the Ministry of Agriculture has formulated model APMC Rules and circulated the same to the States. As resolved in the 53rd Meeting of the NDC, Ministry of Agriculture has requested States/UTs for

completing the process of amendments and notification of Rules by 2007-08.

## NEW INITIATIVES

### National Food Security Mission

7.34 The Department of Agriculture & Cooperation, Ministry of Agriculture, has launched a Centrally-sponsored scheme on National Food Security Mission (NFSM) in pursuance of the resolution of the National Development Council (NDC) to increase the production of rice, wheat and pulses by 10, 8 and 2 million tonnes, respectively, over the benchmark levels of production, by the end of the Eleventh Five Year Plan period. The Mission aims at increasing foodgrains production of the above crops through area expansion and productivity enhancement; restoring soil fertility and productivity; creating employment opportunities; and enhancing farm level economy to restore confidence of farmers of targeted districts.

7.35 Various activities of NFSM relate to demonstration of improved production technology, distribution of quality seeds of HYVs and hybrids, popularization of newly released varieties, support for micronutrients, and training and mass media campaign including awards for best performing districts. The identified districts are given flexibility to adopt any local area specific interventions as are included in the Strategic Research and Extension Plan (SREP) prepared for the agriculture development of the district. Rs. 2 crore each will be provided during the Eleventh Five Year Plan period to those districts which have a programme for two or more crops of the NFSM and Rs. 1 crore to the districts having a programme for any one of the crops. The NFSM is being implemented in 305 districts of 16 States of the country. An amount of Rs. 149.4 crore has been released to

various States to plan and implement various interventions during 2007-08. The total outlay of NFSM is Rs. 4,882.5 crore during the Eleventh Five Year Plan (2007) (Table 7.15).

### Rashtriya Krishi Vikas Yojana (RKVY)

7.36 The NDC in its 53rd meeting also decided to launch a programme to incentivise the States to increase the share of investment in agriculture in their State plans. Accordingly, on August 16, 2007, the Government approved the Rashtriya Krishi Vikas Yojana (RKVY) with an allocation of Rs. 25,000 crore for the Eleventh Five Year Plan. The RKVY aims at achieving the 4 per cent annual growth in the agriculture sector during the Eleventh Five Year Plan period by ensuring a holistic development of agriculture and allied sectors. The RKVY will be a State Plan Scheme and the eligibility for assistance under the scheme would depend upon the amount provided in the State budgets for agriculture and allied sectors, over and above the baseline percentage expenditure incurred on agriculture and allied sectors. The funds under the RKVY would be provided to the States as 100 per cent grant by the Central Government. An outlay of Rs. 1,500 crore has been approved for 2007-08. The main objectives of the schemes are:

- (i) To incentivise the States to increase public investment in agriculture and allied sectors.
- (ii) To provide flexibility and autonomy to the States in planning and executing agriculture and allied sector schemes.
- (iii) To ensure the preparation of plans for the districts and the States based on agro-climatic conditions, availability of technology and natural resources.
- (iv) To ensure that the local needs/crops/priorities are better reflected.
- (v) To achieve the goal of reducing the yield gaps in important crops, through focused interventions.
- (vi) To maximize returns to the farmers.

**Table 7.15** Allocation proposed under NFSM (Rs. crore)

Year	Rice	Wheat	Pulses	Total
2007-08	70.8	234.6	96.9	402.3
2008-09	348.1	682.7	285.9	1316.8
2009-10	366.3	290.8	287.2	944.2
2010-11	428.3	341.5	286.4	1056.3
2011-12	508.8	370.8	283.4	1163.0
<b>Total</b>	<b>1722.3</b>	<b>1920.3</b>	<b>1239.9</b>	<b>4882.5</b>

### National Policy for Farmers, 2007

7.37 Government of India has approved the National Policy for Farmers, 2007 taking into account the recommendations of the National Commission on Farmers and after consulting the State Governments. The National Policy for

Farmers, among other things, has provided for a holistic approach to development of the farm sector. The broad areas of its coverage include:

- (i) Focus will be on the *economic well-being of the farmers* in addition to production and productivity.
- (ii) *Asset reforms*: To ensure that a farmer household in villages either possesses or has access to a productive asset or marketable skill.
- (iii) *Water use efficiency*: The concept of maximizing yield and income per unit of irrigation water in all the crop production programmes would be accorded priority with stress on awareness and efficiency of water use.
- (iv) *New technologies* like biotechnology, information and communication technology (ICT), renewable energy technology, space applications and nano-technology would be encouraged for improving productivity per unit of land and water on a sustainable basis.
- (v) *National Agricultural Bio-security System* would be established to organize a coordinated agricultural bio-security programme.
- (vi) *Seeds and Soil Health*: Quality seeds, disease free planting material and soil health enhancement hold the key to raising small farm productivity. Every farmer is to be issued with a soil health passbook containing integrated information on farm soils with corresponding advisories.
- (vii) *Support services for women*: Appropriate support services like crèches, child care centres and adequate nutrition needed by women working in fields would be funded.
- (viii) *Credit & Insurance*: The financial services would be galvanized for timely, adequate and easy reach to the farmers at reasonable interest rates.
- (ix) *Gyan Chaupals* at village level with the help of ICT and farm schools in the fields of outstanding farmers to promote farmer to farmer learning would be set

up through the State Governments for strengthening extension services.

- (x) Necessary steps would be taken to put in place an appropriate *social security scheme* for farmers.
- (xi) *Minimum Support Price (MSP)* mechanism to be implemented effectively across the country so as to ensure remunerative prices for agricultural produce.
- (xii) *Food Security basket* is to be enlarged to include nutritious millets such as bajra, jowar, ragi and millets, mostly grown in dry land farming areas.

An inter-Ministerial Committee has been setup to operationalize the implementation of the policy.

## ALLIED SECTORS

### Plantation Crops

#### Tea

7.38 The production of tea started recovering from stagnation from 2002-03 and since then a positive growth in production has been maintained (Table 7.16). The Government has set up a Special Purpose Tea Fund for funding replantation and rejuvenation activities aimed at improving the age profile of tea plantations. The scheme has been approved for implementation till the end of the Eleventh Five Year Plan with an estimated outlay of Rs. 567.1 crore (subsidy of Rs. 476.1 crore and Rs. 91.0 crore towards capital contribution) to be provided by the Government. The estimated area to be taken up for replantation/rejuvenation during the period would be 85,044 ha comprising replantation in 68,154 ha and rejuvenation in 16,890 ha. This is expected to improve not only yield levels but also improve the quality to fetch better returns. Further, a rehabilitation package providing financial relief to the extent of Rs. 38.65 crore for 33 closed tea gardens was announced on June 29, 2007. 10 of these gardens have since opened.

#### Coffee

7.39 The production of coffee has not yet come out of the stagnation phase notwithstanding a marginal increase from 2.7 lakh tonnes in 2005-06 to 2.9 lakh tonnes in 2006-07. Although India

**Table 7.16 Tea production, consumption and trade**

(Qty: million kg, Value: Rs. crore)

	Production	Exports		Imports		Domestic consumption <sup>b</sup>
	Quantity	Quantity	Value	Quantity	Value	Quantity
2002-03	845.97	184.4	1665.04	22.49	105.32	693
2003-04	878.65	183.07	1636.99	11.34	66.23	714
2004-05	906.84	205.81	1924.71	32.53	145.15	735
2005-06	948.94	196.67	1793.58	17.41	102.77	757
2006-07	947.12	218.15	2045.72	20.78	110.88	771
2007-08 <sup>a</sup>	805.18	100.87	998.68	11.80	76.16	N.A.
	(Apr-Nov)	(Apr-Nov)	(Apr-Nov)	(Apr-Nov)	(Apr-Nov)	

Source: Ministry of Commerce and Industry.

a Estimated.

b Relates to calendar year.

N.A. Not Available.

contributes only 4 per cent of total world production, Indian coffee has created a niche for itself in the international market, particularly Indian robustas, which are highly preferred for their blending quality. Arabica coffee from India is also well received in the international market (Table 7.17).

7.40 To mitigate the problems of coffee growers arising from the low prices of coffee, a series of steps have been taken including restructuring of loans and interest relief to coffee growers (a subsidy of 5 per cent for small growers and 3 per cent for large growers is available on their working capital loans taken from the financial institutions). Import duty on specified machinery for coffee sector has been reduced to enable the industry to improve productivity and quality of coffee. Weather (rainfall) insurance as a risk management support for coffee growers in collaboration with Agriculture Insurance Company of India Ltd is also implemented.

**Natural rubber**

7.41 India is the fourth largest producer of natural rubber (NR) with a share of 8.8 per cent in world production in 2006. In 2006-07, the smallholding sector accounted for 89 per cent of the area planted and 92 per cent of the NR production (Table 7.18).

7.42 The area under NR plantation increased by about 8 per cent from 5.7 lakh ha from 2002-03 to 6.2 lakh ha in 2006-07. During this period the production of NR increased by 31 per cent. Productivity reached the highest level of 1,879 kg/ha which was also the highest among major NR producing countries in 2006. During 2006-07, the country exported 56,545 tonnes of NR against an import of 89,699 tonnes. Export of NR is perceived as a strategy to adjust domestic demand-supply balance and to educate the growers on the need to process the produce in conformity with the international standards.

**Table 7.17 Production and export of coffee**

Year	Production	Exports			Domestic consumption (lakh tonnes)
	(lakh tonnes)	(lakh tonnes)	(Rs. crore)	(US\$ million)	
2000-01	3.01	2.47	1374	243	0.60
2001-02	3.01	2.14	1050	216	0.64
2002-03	2.75	2.07	1051	234	0.68
2003-04	2.71	2.33	1158	262	0.70
2004-05	2.76	2.12	1225	295	0.75
2005-06	2.74	2.02	1510	353	0.80
2006-07	2.88	2.49	1016	453	0.80
2007-08 <sup>a</sup>	2.62	1.2	1062	253	0.85

<sup>a</sup> estimated

**Table 7.18** Production, export and import of natural rubber

Year	Area (ha)	Production (tonnes)	Productivity (Kg/ha)	Export (tonnes)	Import (tonnes)	Consumption (tonnes)
2002-03	569667	649435	1592	55,311	26,217	695425
2003-04	575980	711650	1663	75,905	44,199	719600
2004-05	584090	749665	1705	46,150	72,835	755405
2005-06	597610	802625	1796	73,830	45,285	801110
2006-07 <sup>a</sup>	615200	852895	1879	56,545	89,699	820305
2007-08 <sup>b</sup>	630000	819000	1784			857000

<sup>a</sup> provisional      <sup>b</sup> estimated

**Price stabilization fund scheme**

7.43 The Price Stabilization Fund Scheme (PSFS) for tea, coffee, rubber and tobacco growers was launched in April 2003 against the backdrop of decline in unit value realization of these commodities, at times falling below their cost of production. The objective of PSF was to safeguard the interests of growers and provide financial relief when prices fall below a specified level without resorting to the practice of procurement operations by the Government agencies. Out of a target of 12.77 lakh growers (up to 4 ha landholding), it was decided to cover 3.42 lakh small growers (up to 2 ha landholding), in the initial phase. As on March 31, 2007, the enrolment under the scheme was 45,268.

7.44 As on November 30, 2007, the PSF Corpus Fund consisted of Rs. 435.1 crore, out of which Rs. 432.9 crore is contributed by Government of India and Rs. 2.3 crore by growers by way of entry fee. A sum of Rs. 103.4 crore as interest is also available to the Price Stabilization Fund Trust (PSFT) as on March 31, 2007. Since the launch of the scheme in April 2003, the PSF Trust has announced Price Spectrum Bands for 2003, 2004, 2005 and 2006 and the cumulative financial assistance committed stood at Rs. 3.71 crore (Table 7.19).

**Table 7.19** Financial assistance committed under PSF

Commodity	(Rs. crore)				
	2003	2004	2005	2006	Total
Rubber	0	0	0	0	0
Coffee	0.82	0.58	0	0	1.40
Tea	0.09	0.73	0.74	0.75	2.31
<b>Total</b>	<b>0.91</b>	<b>1.31</b>	<b>0.74</b>	<b>0.75</b>	<b>3.71</b>

7.45 However, because of growers defaulting in depositing their contribution, assistance of only Rs. 1.16 crore could be released to tea and coffee growers so far. To improve the effectiveness of the scheme and to achieve better results towards providing meaningful assistance to the growers, the Department of Commerce is in the process of restructuring the scheme.

**Production of horticulture crops**

7.46 The horticulture sector in 2005-06 contributed around 28 per cent of GDP in agriculture. Vegetables, fruits, plantation crops and spices contributed to 59.8 per cent, 30.9 per cent, 6.5 per cent and 2.1 per cent of total horticulture production, respectively, in 2006-07. The production of horticultural crops registered an increase of 8.9 per cent in 2005-06. Growth in production decelerated to 2.8 per cent in 2006-07, mainly because of the decline in the production of onions and a stagnation in the production of spices (Table 7.20).

**National Horticulture Mission (NHM)**

7.47 The Department of Agriculture and Cooperation has launched a Centrally-sponsored scheme called National Horticulture Mission (NHM) during 2005-06 for holistic development of this sector ensuring horizontal and vertical linkages with the active participation of all the stakeholders. The Mission's objectives are: enhance horticulture production through area-based regionally differentiated strategies; improve nutritional security and income support to farm households; establish convergence and synergy among ongoing programmes for horticulture development; and, promote, develop and disseminate technologies. In 2005-06 and 2006-07, against a release of Rs. 1,575.3 crore, an expenditure of Rs. 1,018.4 crore was incurred by the States and national level agencies. An outlay of Rs. 1,150 crore is

**Table 7.20 All India area and production of horticulture crops**

Crop	Area ('000 ha)		Production ('000 tonnes)		2006-07 (provisional)		
	2004-05	2005-06 (final.)	2006-07 (provisional)	Area	Production	Area	Production
<b>Fruits</b>	5049	50867	5339	55397	5506	57727	
<b>Vegetables</b>							
Potato	1524	28788	1520	28697	1572	29647	
Onion	614	7761	694	9228	656	8509	
<b>Total</b>	<b>6744</b>	<b>101246</b>	<b>7131</b>	<b>110106</b>	<b>7211</b>	<b>111770</b>	
Flowers loose	118	659	146	686	154	886	
Plantation crops	3147	9835	3283	11263	3221	12083	
Spices	2532	4068	2422	3923	2422	3923	
<b>Total Horticulture Crops</b>	<b>17827</b>	<b>167005</b>	<b>18713</b>	<b>181814</b>	<b>18980</b>	<b>186872</b>	

Source: Horticulture Division, Department of Agriculture & Cooperation.

earmarked for the implementation of the scheme during 2007-08. Against this, an amount of Rs. 691 crore has been released till the end of January, 2008.

### **Technology Mission for Integrated Development of Horticulture in North-Eastern States, Sikkim, Jammu and Kashmir, Himachal Pradesh and Uttarakhand**

7.48 To harness the potential of horticulture in the North-Eastern region and other special category States, a Centrally-sponsored scheme was sanctioned in 2001-02. In the current fiscal year (2007-08), Rs. 323.40 crore has been earmarked for this scheme, of which Rs. 227.40 crore is for the North-Eastern States and Rs. 96 crore for Jammu & Kashmir, Himachal Pradesh and Uttarakhand. An amount of Rs. 210.64 crore has been released till the end of January 2008.

### **Microirrigation**

7.49 A Centrally-sponsored scheme of microirrigation was launched in January 2006 to promote water use efficiency by adopting drip and sprinkler irrigation. During 2005-06 and 2006-07, Rs. 280.58 crore and Rs. 460.7 crore, respectively, were released for covering 5.9 lakh ha (3.5 lakh ha under drip and 2.4 lakh ha under sprinkler irrigation system). Up to March 2007 an expenditure of Rs. 366.4 crore was incurred and an area of 3.4 lakh ha under drip and sprinkler irrigation system was covered. Allocation of funds

during 2007-08 is Rs. 550 crore for covering 3.6 lakh ha. Rs. 266.7 crore of the allocated amount was released till the end of January 2008.

### **National Bamboo Mission**

7.50 A Centrally-sponsored scheme called National Bamboo Mission was launched in 2006-07. An area of 20,500 ha was covered, the existing stock in 4,117 ha was improved and 213 bamboo nurseries were established with an outlay of Rs. 80 crore. A sum of Rs. 70 crore has been allocated for implementation of the scheme during 2007-08 and Rs. 33.6 crore has been released so far.

### **Terminal Market under NHM**

7.51 The Department of Agriculture and Cooperation has taken the initiative to promote modern terminal markets for fruits, vegetables and other perishables in important urban centres of the country to provide the state-of-the-art infrastructure facilities for electronic auction, cold chain and logistics, and operation through conveniently located primary collection centres. The terminal markets are envisaged to operate on a "hub-and-spoke" format wherein the terminal market (the hub) would be linked to a number of collection centres (the spokes), conveniently located in key production centres to allow easy access to farmers for the marketing of their produce. The Terminal Markets are to be built, owned and operated by a corporate/private/cooperative entity. This entity could be a consortium of entrepreneurs from agri-business, cold chain, logistics, warehousing, agri-

infrastructure and related background. The Central/ State Government lend support to the initiative by providing financial support to the project by way of equity participation up to a maximum of 49 per cent determined through a competitive bidding process. The operational guidelines of the scheme have been circulated to the States, which have amended the APMC Act. Andhra Pradesh, Bihar, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, West Bengal, Nagaland and the Union Territory of Chandigarh have identified land for setting up terminal markets. The Governments of Madhya Pradesh, Punjab and the Union Territory of Chandigarh have issued notices inviting expression of interest.

### Animal husbandry, dairying & fisheries

7.52 The livestock sector contributes over 4 per cent to the total GDP and about a quarter of the GDP from agriculture and allied activities. This sector is a main source of family income in the arid and semi-arid regions. The Eleventh Five Year Plan envisages an overall growth of 6-7 per cent per annum for the sector. In 2006-07, this sector contributed 101 million tonnes of milk, 51 billion eggs, 45 million kg of wool and 2.3 million tonnes of meat. The 17th Livestock Census (2003) has placed the total livestock population at 485 millions and that of poultry birds at 489 millions. The 18th Livestock Census has been conducted throughout the country with reference date of October 15, 2007, results of which are awaited.

7.53 India ranks first in the world in milk production, which increased from 17 million tonnes (MT) in 1950-51 to about 102 MT by 2007-08. The per capita availability of milk has also increased from 112 grams per day in 1968-69 to 246 grams during 2006-07. But it is still low compared to the world average of 265 grams/day. About 80 per cent of milk produced in the country is in the unorganized sector and the remaining 20 per cent is shared equally by cooperative and private dairies. Over 1.2 lakh village-level dairy cooperative societies, spread over 265 districts in the country, collect about 21 million litres of milk per day and market about 18 million litres. The efforts of the department in the dairy sector are concentrated on promotion of dairy activities in non-operation

**Table 7.21** 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
2003-04	231	88.1
2004-05	233	92.5
2005-06	241	97.1
2006-07	246	100.9
2007-08 (provisional)	246	102

flood area with emphasis on building up cooperative infrastructure, revitalization of sick dairy cooperatives and federations and creation of infrastructure in the States for production of quality milk and milk products (Table 7.21).

### National Project for Cattle and Buffalo Breeding

7.54 A major programme for genetic improvement, National Project for Cattle and Buffalo Breeding (NPCBB), was launched in October 2000 and will 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 for Phase I and II, respectively. NPCCB 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. 348.9 crore was released to these States up to 2006-07. During the current financial year, an allocation of Rs. 51 crore has been made under the scheme.

### Livestock Insurance

7.55 Livestock Insurance scheme was introduced on a pilot basis in 100 selected districts during 2005-06 and 2006-07 to protect farmers against losses due to untimely death of their animals. The Central Government provided subsidy to the tune of 50 per cent of the premium under the scheme to insure cross-bred and high-yielding cattle and buffaloes. About 5.2 lakh animals were insured in two years at an expenditure of about Rs. 23.4 crore. The scheme is being continued in 2007-08 with an outlay of Rs. 35 crore. In September 2007, the Institute of Rural Management, Anand, has carried out an evaluation study to examine the impact of the scheme during

its three years of implementation. Based on the suggestions and findings of the study, modification in the scheme will be considered.

### Poultry

7.56 The poultry sector, undeterred by isolated occurrence of bird flu in 2007, is sustaining the level of production. The per capita availability of the poultry products, however, has an immense scope of improvement with present consumption of only 42 eggs and 1.6 kg of chicken meat per person per year. The exports of poultry products in 2006-07 were to the tune of Rs. 316 crore. The availability and cost of maize are the deterrent factors in scaling up production at a sustainable pace. The industry is gearing up through contract farming of maize, etc., to cope with any shortfall. The Government, through the Technology Mission on Oilseeds, Maize and Pulses, is increasing the quality and yield of maize.

7.57 The present wave of avian influenza (commonly known as bird flu) in poultry started in Hong Kong in 1997. About 60 countries have reported avian influenza. During the year 2007, avian influenza has been reported in 25 countries including India, Bangladesh, Pakistan, China and Myanmar. India remained free from avian influenza till mid-February 2006. Since then there has been location-specific outbreaks which have been successfully contained. A recent outbreak of avian influenza has been reported from West Bengal.

### Fisheries

7.58 Fish production increased by 4.4 per cent and reached 6.9 million tonnes in 2006-07. Fishing, aquaculture and allied activities are reported to have provided livelihood to over 14 million persons

in 2005-06 apart from being a major foreign exchange earner (Table 7.22).

7.59 The National Fisheries Development Board (NFDB) has been set up to realize the untapped potential of the fishery sector with the application of modern tools of research and development including biotechnology. The board was registered in July 2006 under the Andhra Pradesh Societies Registration Act, 2001, and has become operational.

### Farmers' Indebtedness

7.60 NSSO in its 59th round of surveys (January-December 2003) covered indebtedness of farmers. Some of the major observations of the survey were:

- (i) 48.6 per cent of households were indebted.
- (ii) Of the total number of indebted farmers, 61 per cent had operational holding below 1 ha.
- (iii) Of the total outstanding amount, 41.6 per cent was taken for purposes other than the farm related activities. 30.6 per cent of the total loan was for capital expenditure purposes and 27.8 per cent was for current expenditure in farm-related activities.
- (iv) 57.7 per cent of the outstanding amount was sourced from institutional channels (including government) and the balance 42.3 per cent from moneylenders, traders, relatives and friends.
- (v) The Expert Group estimate that in 2003 non-institutional channels accounted for Rs. 48,000 crore of farmers' debt out of which Rs. 18,000 crore was availed of at an interest rate of 30 per cent per annum or more.

7.61 Indebtedness or overhang of debt has been both due to the exogenous factors such as weather induced crop uncertainties and endogenous reasons such as the consumption needs of the farmers that have taken precedence over the repayment obligations. For many farmers this could be genuine as incomes from agriculture may not have been sufficient to generate a surplus. The Expert Group on Agricultural Indebtedness which was chaired by Shri R. Radhakrishna submitted its report in July, 2007. The Group,

**Table 7.22 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	6288
2003-04	3.0	3.4	6.4	412	6087
2004-05	2.8	3.5	6.3	482	6460
2005-06	2.8	3.8	6.6	551	7019
2006-07(P)	3.0	3.8	6.9	563	7296

among others, has recommended inclusion of financially excluded, particularly the small borrower households, and adoption of risk mitigating measures for agriculture. It has proposed setting up of the Price Risk Mitigation Fund to compensate farmers in extreme situation of price collapse in case of plantation and other crops not covered by MSP. The Government is considering various options for addressing the issue of agricultural indebtedness.

7.62 International experience of price stabilization fund has generally been disappointing. The basic principle of a stabilization fund is that the prices should converge to the mean. Prolonged slumps in prices make the fund bankrupt and sustained high prices erode the incentives for being associated with the fund, as the transaction costs of operation of fund are considered avoidable. For a publicly-funded price stabilization fund, while it may become obligatory to provide support when prices are low, there may not be enough support to generate surpluses by withholding a part of price increase from being allocated to producers. There may also be a redistribution of risk from producer to the Government.

### FOOD MANAGEMENT

7.63 Food management in India has three basic objectives: procurement of foodgrains from farmers

at remunerative prices, distribution of foodgrains to the consumers particularly the vulnerable sections of the society at affordable prices, and maintenance of food buffers for food security and price stability. The instruments for food management are the Minimum Support Price (MSP) and Central Issue Price (CIP). The nodal agency which undertakes the procurement and distribution and storage of foodgrains is the Food Corporation of India (FCI). The procurement under the current system is open-ended at MSP, while the distribution is governed by the scale of allocation and its offtake by the beneficiaries.

### Procurement of foodgrains

7.64 Rice and wheat are predominant cereals in procurement of foodgrains. Overall procurement which reached 42.4 million tonnes in 2005-06 declined to 35.8 million tonnes in 2006-07. The decline in wheat procurement in RMS 2006-07 and 2007-08 is attributed to less than the targeted production of wheat, lower market arrivals, high ruling market prices, negative market sentiments due to low stocks of wheat in the Central pool, and aggressive purchases by the private traders. To encourage farmers to increase production of wheat as well as to enhance procurement in RMS 2007-08, the Government announced MSP of Rs. 850 per quintal (inclusive of bonus).

**Table 7.23 Procurement and offtake of wheat and rice (million tonnes)**

	2003-04	2004-05	2005-06	2006-07	April-Dec	
					2006-07	2007-08
<b>Procurement of wheat and rice under Central pool</b>						
Rice	20.8	24.0	26.7	26.3	19.1	17.2 <sup>b</sup>
Wheat	15.8	16.8	14.8	9.2	9.2	11.1
Total <sup>a</sup>	37.2	41.6	42.4	35.8	28.3	28.3
<b>Offtake of wheat and rice for TPDS</b>						
Rice	13.4	16.6	19.2	21.2	15.9	16.5
Wheat	10.8	13.1	12.2	10.4	7.7	8.2
Total	24.2	29.7	31.4	31.6	23.6	24.7
BPL	15.8	17.5	15.6	14.2	10.6	11.2
APL	4.2	6.7	8.3	8.7	6.6	7.0
Antyodaya	4.2	5.5	7.4	8.7	6.4	6.5
<b>Offtake of wheat and rice for other schemes</b>						
Welfare schemes	13.5	10.6	9.7	5.1	3.8	2.6
Open sales/exports	11.6	1.2	1.1	0.0	0.0	0.0
Total	49.3	41.5	42.1	36.7	27.4	27.3

Source : Food Bulletin- Department of Food and Public Distribution.

<sup>a</sup> Includes the procurement of coarse grains. <sup>b</sup> Procurement in KMS 2007-08.

Procurement, however, increased only in a limited way to 11.1 million tonnes, compared to 9.2 million tonnes in RMS 2006-07. However, procurement of wheat was substantially less than the targets in Uttar Pradesh, Madhya Pradesh and Bihar. Rice procurement also fell marginally to 26.3 million tonnes during 2006-07 from 26.7 million tonnes during 2005-06. MSP, inclusive of bonus, for paddy was raised for the 2007-08 kharif marketing season by Rs. 125 per quintal. To incentivise the procurement, MSP (plus bonus) was fixed at Rs. 745 per quintal for common varieties of paddy and to Rs. 775 per quintal for Grade 'A' varieties. Further, to maximize procurement of rice, a ban on export of non-basmati rice was imposed on October 9, 2007. However, on October 25, 2007, a decision to reverse the ban was taken on non-basmati rice above the Minimum Export Price (MEP) of \$425 per tonne (FoB), which was raised to \$500 per tonne on December 27, 2007. It is expected that the estimated procurement of 26 million tonnes for the current year will be achieved. In KMS 2007-08, procurement up to December 31, 2007, is 17.19 million tonnes compared to 16.76 million tonnes in the corresponding period last year (Table 7.23).

7.65 The procurement of foodgrains by FCI continues to be higher in States such as Punjab, Haryana, Uttar Pradesh and Andhra Pradesh. These four States accounted for nearly 71 per cent of rice procured for the Central pool in KMS 2004-05, 68.8 per cent in 2005-06 and 69.7 per

cent in 2006-07. Punjab and Haryana accounted for more than 91 per cent of wheat procurement in RMS 2005-06 (Table 7.24) which increased to 99.5 per cent in 2006-07 but declined to 91.1 per cent in 2007-08. In some of the major rice and wheat producing States, procurement by the State agencies, however, remained poor. Procurement of wheat in Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh was significantly lower relative to their production. Similarly, for rice, the ratio of procurement to production was significantly lower in West Bengal, Tamil Nadu, Bihar, Karnataka, Maharashtra and Jharkhand. There may be a need to strengthen the procurement machinery in these States.

### Decentralized Procurement Scheme

7.66 The Decentralized Procurement Scheme (DCP) scheme is in operation since 1997 in 10 States and a Union Territory, namely, West Bengal, Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Uttarakhand, Gujarat, Orissa, Tamil Nadu, Karnataka and Kerala and the Union Territory of Andaman & Nicobar Islands. Under this scheme, the designated States procure, store and also issue foodgrains under the Targeted Public Distribution System (TPDS). The difference between the economic cost of the State Government and the Central Issue Price is passed on to the State Government as subsidy. The decentralized system of procurement helps to cover more farmers under the MSP operations, improves efficiency of the

**Table 7.24 State-wise procurement of rice and wheat (lakh tonnes)**

	Rice (October-September)			Wheat (April-March)		
	2004-05	2005-06	2006-07	2005-06	2006-07	2007-08
Punjab	91.1	88.6	78.3	90.1	69.5	67.8
Andhra Pradesh	39.1	49.7	53.3			
Chhattisgarh	28.4	32.7	28.6			
Uttar Pradesh	29.7	31.5	25.5	5.6	0.5	5.5
Orissa	15.9	17.9	19.9			
Haryana	16.6	20.5	17.7	45.3	22.3	33.5
Tamil Nadu	6.5	9.3	10.8			
West Bengal	9.4	12.8	6.4			
Bihar	3.4	5.2	4.8	0.0	-	0.1
Uttarakhand	3.2	3.4	1.8			
Kerala	0.3	0.9	1.5			
Maharashtra	2.1	1.9	1.0			
Madhya Pradesh	0.4	1.4	0.7	4.8	-	0.6
Rajasthan	0.2	0.2	0.1	1.6	0	3.8
<b>Total</b>	<b>246.9</b>	<b>276.6</b>	<b>250.8</b>	<b>147.9</b>	<b>92.3</b>	<b>111.3</b>

PDS, provides foodgrain varieties more suited to local taste and reduces the transportation costs of the FCI. There was a record procurement of 10.9 million tonnes of rice under this scheme by these States in KMS 2005-06. In case of rice, States under DCP operations have shown a healthy trend of increase in procurement. In case of wheat, however, the procurement in DCP States, particularly Uttar Pradesh and Madhya Pradesh, has shown a declining trend in the last few years, primarily due to aggressive purchases by private companies, lower rates of taxes and levies than in Punjab and Haryana and the proximity to markets in southern and western States of the country.

### Import of wheat

7.67 The decision to import wheat was taken to meet the deficit in the Central pool for meeting commitments under TPDS, other food-based welfare schemes and emergency relief measures. It was also necessitated to augment the domestic availability of wheat for maintaining food security and price stability. Government imported 5.5 million tonnes of wheat in 2006-07 at a weighted average price of US\$ 204.7 per tonne. During 2007-08 also, the Government has decided to import wheat for the Central pool and orders have already been placed for import of 1.8 million tonnes. These imports are at weighted average cost of US\$ 325.6 per tonne (5.1 lakh tonnes), US\$ 389.5 (8 lakh

tonnes), US\$ 400.2 (3.4 lakh tonnes) and US\$ 396.9 (1.5 lakh tonnes).

### Buffer stock

7.68 The years 2001-03 witnessed high levels of stock build up in the Central pool. The foodgrains stocks reached a peak of 64.7 million tonnes, an all-time record, in June 2002. The year 2003-04 witnessed a general easing in the foodgrains stocks with the FCI, because of relatively lower procurement of rice and wheat following a bad agricultural year in 2002-03 combined with relatively high offtake of foodgrains, especially for drought relief operations (Table 7.25).

7.69 The steady reduction in stocks prompted the Government to stop fresh allocation of rice and wheat for export from August 2003. The year 2004-05 started with a much lower level of stock at 20 million tonnes on April 1, 2004, as compared to the stock level of 32.8 million tonnes on April 1, 2003. The foodgrains stocks, however, remained consistently higher than the buffer requirement during 2004-05, on account of good procurement of rice and wheat and relatively lower offtake than in the previous year. As on April 1, 2005, the stock was 17.4 million tonnes against the buffer norms of 16.2 million tonnes. The stock of foodgrains as on April 1, 2006, was 15.7 million tonnes against the buffer norms of 16.2 million

**Table 7.25 Buffer norms and actual stock of wheat and rice**

Beginning of the month	Wheat		Rice		Total (wheat and rice)	
	Buffer norms	Actual stock	Buffer norms	Actual stock	Buffer norms	Actual stock
January, 2004	8.4	12.7	8.4	11.7	16.8	24.4
April	4.0	6.9	11.8	13.1	15.8	20.0
July	14.3	19.2	10.0	10.8	24.3	29.9
October	11.6	14.2	6.5	6.1	18.1	20.3
January 2005	8.4	8.9	8.4	12.8	16.8	21.7
April	4.0	4.1	12.2	13.3	16.2	17.4
July	17.1	14.5	9.8	10.1	26.9	24.5
October	11.0	10.3	5.2	4.9	16.2	15.1
January 2006	8.2	6.2	11.8	12.6	20.0	18.8
April	4.0	2.0	12.2	13.7	16.2	15.7
July	17.1	8.2	9.8	11.1	26.9	19.3
October	11.0	6.4	5.2	6.0	16.2	12.4
January 2007	8.2	5.4	11.8	12.0	20.0	17.4
April	4.0	4.7	12.2	13.2	16.2	17.9
July	17.1	12.9	9.8	11.0	26.9	23.9
October	11.0	10.1	5.2	5.5	16.2	15.6
January, 2008	8.2	7.7	11.8	11.5	20.0	19.2

**Table 7.26 Economic cost of wheat and rice (Rs. per quintal)**

Year	2003-04	2004-05	2005-06(P)	2006-07(P) <sup>a</sup>	2007-08(QE)
<b>Rice</b>					
Procurement incidentals	25.6	58.5	30.1	191.8	207.6
Distribution cost	215.4	256.5	273.5	300.6	328.0
Economic cost <sup>b</sup>	1231.3	1303.6	1337.3	1411.6	1572.6
<b>Wheat</b>					
Procurement incidentals	145.5	182.7	171.2	179.4	175.8
Distribution cost	165.3	222.8	234.9	280.2	286.7
Economic cost	928.7	1019.0	1044.5	1214.4	1371.3

<sup>a</sup> For rice, from 2006-07 in the incidentals, weightage of levy rice incidentals is also taken.

<sup>b</sup> Weighted average of common and Grade A rice in taken together.

tonnes. The present stock position of foodgrains as on January 1, 2008, is 19.2 million tonnes comprising of 11.5 million tonnes of rice and 7.7 million tonnes of wheat which along with projected arrivals of wheat imports will be adequate for meeting the requirements under TPDS and welfare schemes during the current financial year.

### Economic cost of foodgrains to FCI

7.70 The economic cost of foodgrains consists of three components: MSP as the price paid to farmers, procurement incidentals and the cost of distribution. The economic cost has witnessed a significant increase for both wheat and rice in 2007-08. While in part it is due to an increase in MSP for wheat and rice, it has also been due to an increase in procurement incidentals, particularly for rice. Economic cost of wheat for 2007-08 (RE) is Rs. 1,371.3 per quintal as against Rs. 1,214.4 per quintal in 2006-07 (Prov). Similarly, economic cost of rice in 2007-08 (RE) was Rs. 1,572.6 per quintal as against Rs. 1,411.6 per quintal in 2006-07 (Prov). The substantial increase in the MSPs of rice and wheat and bonus are the main reasons for increase of economic cost of foodgrains. The difference between the economic cost of foodgrains and the issue price is reimbursed to FCI. The incidence of taxation and levies on wheat and rice

continues to be high in large procuring States like Punjab. The major procurement States, namely, Punjab, Haryana and Andhra Pradesh, have been imposing State taxes and levies of over 10 per cent *ad valorem* on the procurement of foodgrains, thereby inflating the economic cost (Table 7.26).

### Offtake of foodgrains from the Central pool

7.71 The offtake of foodgrains is primarily under the Targeted Public Distribution System and for other welfare schemes. Under TPDS the allocation is made in terms of scale of issue which is 35 kg. per family. Offtake of the foodgrains, however, is lower than the allocation because some of the beneficiaries under the TPDS may not take the delivery of foodgrains as per their entitlement. Total offtake of foodgrains, however, has been in line with the procurement in the last four years.

### Food subsidy

7.72 The difference between the economic cost of foodgrains and the issue price is reimbursed to FCI. 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. By fulfilling the obligation towards distributive justice,

**Table 7.27 Growth of food subsidy in India (other than sugar)**

Year	Food subsidy (Rs. crore)	Annual Growth (%)	Year	Food subsidy (Rs. crore)	Annual Growth (%)
1997-98	7500	45.2	2003-04	25160	4.1
1998-99	8700	16.0	2004-05	25746	2.3
1999-00	9200	5.8	2005-06	23071	-10.4
2000-01	12010	30.5	2006-07	23828	3.3
2001-02	17494	45.7	2007-08(BE)	25425	6.7
2002-03	24176	38.2			

**Table 7.28** MSP and issue price for wheat and rice under TPDS

Marketing season	Minimum support		Central issue price					
	Price		Wheat			Rice		
	Wheat	Paddy	APL	BPL	AAY	APL	BPL	AAY
2002-03	620	550	610	415	200	795	565	300
2003-04	630	550	610	415	200	795	565	300
2004-05	630	560	610	415	200	795	565	300
2005-06	640	570	610	415	200	795	565	300
2006-07	700	620	610	415	200	795	565	300
2007-08	850	745	610	415	200	795	565	300
2008-09	1000							

From April 1, 2002 to June 30, 2002, issue price for APL for both wheat and rice was reduced by Rs. 100 per quintal.

MSP and CIP (for APL families) for paddy/rice are for common grade.

the Government incurs food subsidies. Food subsidy showed an annual increase of above 30 per cent during each of the three years namely, 2000-01, 2001-02 and 2002-03 but it is relatively stable since 2003-04 (Table 7.27).

7.73 Food subsidy being the difference between the economic cost of wheat and rice and their issue prices for different groups of beneficiaries are linked to the increase in the economic cost and the issue prices. While the economic cost of wheat and rice has gone up due to an increase in MSP, the issue price has been kept unchanged since July 1, 2002 (Table 7.28).

7.74 Though the total amount of subsidy has continued to rise, State-wise allocations of subsidies do not seem to be related to the poverty levels. The ratio of the percentage allocation of subsidies as given by the offtake of foodgrains under TPDS and the proportion of people below poverty line is less than one for many of the poorer States (Table 7.29).

**Rationalization of wheat/rice allocation**

7.75 Keeping in view the declining stock position in the Central pool, the Central Government has taken several steps to mitigate the shortage of wheat, such as, rationalization of allocation of wheat for APL category under the TPDS and import of wheat. The allocation of wheat under TPDS for the APL category has been rationalized from June 2006 based on each State’s average offtake during the earlier three years or the last year’s offtake, whichever was lower. A 25 per cent cut was imposed in respect of rice consuming States. However, there has

been no change in the overall allocation/ entitlements for BPL and AAY categories. Thereafter, in view of the improved stock position and to keep prices of wheat in the open market under check, the Department of Food and Public Distribution has released about 1 lakh tonnes of wheat under APL category for all the States/UTs every month from September 2006 to July 2007 and further from September 2007 to March 2008. A quantity of 1.24 lakh tonnes of wheat and 0.40 lakh tonnes of rice was also allocated as festival allocation to States/UTs during October and December 2007. Similarly, keeping in view the stock position of rice in the Central pool, allocation of rice made for the APL category under the TPDS has been rationalized from April 2007 for all the States/UTs on the basis of their offtake during 2003-04, 2004-05 and 2005-06. While the allocations for AAY and BPL categories are made at 35 kg per family per month, allocations for APL category are made depending upon the availability of stocks in the Central pool.

**Sugar**

7.76 The sugar production is provisionally estimated at 280 lakh tonnes in 2006-07 sugar season (October-September) as compared to sugar production of 193 lakh tonnes in 2005-06 sugar season. In 2007-08 sugar season, sugar production is preliminarily estimated at about 270 lakh tonnes. The consumption is estimated at 200 lakh tonnes. Taking into account the opening stock of about 110 lakh tonnes at the beginning of the current sugar year (October 1, 2007), there would be enough availability of sugar in the season. Due to better open market realization over a cycle of three sugar years from 2003-06, the total sugarcane

**Table 7.29 Allocation of subsidies and population below poverty line**

State	Food subsidy for TPDS			Per cent of total food subsidy	Percentage of people below poverty line	Ratio of percentage of subsidies/percentage of persons below poverty line
	2005-06	2006-07	Average			
Bihar	975.1	625.1	800.1	3.5	12.2	0.3
Punjab	119.2	49.6	84.4	0.4	0.7	0.5
Jharkhand	678.1	429.4	553.7	2.4	3.9	0.6
Rajasthan	882.4	388.5	635.4	2.8	4.5	0.6
Madhya Pradesh	1571.4	949.0	1260.2	5.5	8.3	0.7
Uttar Pradesh	4024.3	2766.3	3395.3	14.8	19.6	0.8
Maharashtra	2183.5	1499.6	1841.6	8.0	10.5	0.8
Haryana	275.0	139.1	207.1	0.9	1.1	0.9
Orissa	1111.8	1130.9	1121.4	4.9	5.9	0.8
Gujarat	744.4	438.7	591.6	2.6	3.0	0.9
Goa	18.6	8.3	13.5	0.1	0.1	1.0
Chhattisgarh	787.9	663.4	725.7	3.2	3.0	1.1
West Bengal	1903.2	1593.4	1748.3	7.6	6.9	1.1
Karnataka	1611.9	1409.0	1510.5	6.6	4.6	1.4
Delhi	373.0	239.4	306.2	1.3	0.8	1.8
Kerala	821.6	674.7	748.1	3.3	1.6	2.0
Tamil Nadu	2636.1	2595.2	2615.7	11.4	4.8	2.4
Andhra Pradesh	2415.3	2243.0	2329.1	10.2	4.2	2.4
<b>Total of all states</b>	<b>25813</b>	<b>19945.5</b>	<b>22879.3</b>	<b>100</b>	<b>100</b>	

**Note:** 1. Subsidies have been calculated on the basis of offtake and difference between economic cost and issue price.

2. Share of BPL population is as per Planning Commission 2004-05.

3. Totals cover all States and UTs including the ones not specifically mentioned.

dues paid to farmers as on October 15, 2006, for 2005-06 sugar season were Rs. 20,686.26 crore. Accordingly cane arrears were at a historic low of 0.32 per cent for the sugar year 2005-06. The prevalence of sellers market in these sugar seasons for sugar cane resulted in additional incremental income to the sugarcane farmers, besides creating a healthy investment climate for sugar industry. The position changed thereafter on account of high production of sugar in 2006-07 sugar season and anticipated higher production in the current 2007-08 season resulting in decline in sugar prices with the consequent effect on payment of cane price to farmers. The cane price arrears for the 2006-07 sugar season, as on November 15, 2007, are estimated at about Rs. 1,825.75 crore. The total cane price pertaining to 2006-07 season (October-September) by November 15, 2007 was Rs. 27,629.33 crores and the cane arrears constituted 6.2 per cent of the total value of cane. The cane arrears percentage had increased on account of overwhelmingly excess production and cane crushed as well as low sugar price realization due

to excess production, but were significantly lower in percentage terms compared to previous peak production year 2002-03. The volume of payment made and sugar produced in 2006-07 (280 lakh tonnes) have been at an all-time high.

7.77 To help the sugar industry and sugar cane farmers the Government has taken the following measures:

- (i) Creation of buffer stock of 50 lakh tonnes for one year. The banks provide additional credit on creation of buffer stock. The buffer subsidy amount and the additional credit are to be used for payment of cane price including cane price arrears as first priority.
- (ii) Export assistance to defray expenditure on internal transport, marketing and handling charges and ocean freight for a period of one year with effect from April 19, 2007. Such assistance is also to be used for payment of cane price including cane price arrears as first priority.

- (iii) Facilitation of sugar exports – requirement of release orders for export has been dispensed with from July 31, 2007, to facilitate sugar exports and improve their liquidity position.
- (iv) Extending moratorium on outstanding term loans as on April 1, 2005, for cooperative sugar factories in the country.
- (v) To give loans from the banks under special guidelines to the sugar mills — private, public sector and cooperative – of an amount equivalent to the notional central excise duty payable on total production during 2006-07 and 2007-08 sugar years and to provide full interest subvention to the banks on account of this loan, subject to a cap of 12 per cent per annum. The loan amount is to be used for clearance of cane price arrears of 2006-07 sugar season and cane price of 2007-08 sugar season relating to the Statutory Minimum Price (SMP) of sugarcane fixed by the Central Government.
- (vi) 5 per cent blending of ethanol with petrol has been made mandatory across the country, except in Jammu and Kashmir, North-Eastern States and Island Territories and 10 per cent blending optional from October 2007 and mandatory from October 2008

The above measures, will improve the financial position of sugar factories enabling them to clear the outstanding cane price arrears.

## CHALLENGES AND OUTLOOK

7.78 The agriculture, forestry and fishing sector is estimated to grow at 2.6 per cent during 2007-08, as against the previous year's growth of 3.8 per cent. Besides the weather induced fluctuations, output of this sector has been affected due to reduced capital investment and plateauing of yield levels in major crops. Any deceleration in the growth of this sector is translated into a lower overall GDP growth.

7.79 Acceleration of growth of this sector will not only push the overall GDP growth upwards, it

would also make the growth more inclusive and biased in favour of women. Increasing farm incomes is also necessary for an equitable growth. Further, with uncertainties in global markets and hardening of the international prices of food, fuels and edible oils, domestic price stability and food security critically depend on growth in this sector. This necessitates working out the forward and backward linkages that enhance productivity through balanced allocation and better utilization of available resources at all levels of implementation and quantifying output per unit of resource used. The issue of productivity and resource use assumes importance as agriculture continues to support more than half of the total population.

7.80 The long-term policy framework at broad sectoral level needs to be strengthened and focused on improving inter- and intra-sectoral linkages. In addition, there is a need to build an outcome-oriented perspective in the implementation of public programmes in the area of irrigation, fertilizers, use of high-yielding varieties of seeds, extension support for facilitating adoption of improved practices, and market access. While public investment in agriculture may not have kept pace with the requirements of the sector, food and fertilizer subsidies have supported the agriculture sector. There may be a need for better targeting of these subsidies with a view to optimize the resource allocation and returns there from. With area under cultivation remaining constant, improving the productivity of crops is necessary for strengthening the farm sector.

7.81 Consequent upon the 53rd Meeting of NDC on May 29, 2007, new initiatives in the form of National Food Security Mission and Rashtriya Krishi Vikas Yojana have been taken in 2007-08 to rejuvenate this sector. The sector will benefit immensely from these policy interventions. Human resource development of the persons engaged in agriculture is necessary not only to have greater penetration of better technology but also because new skill sets would be necessary to enable underemployed labour in this sector to get absorbed in other fast growing sectors.

