

Agriculture

Production and growth

Monsoon-2003

After extreme monsoon aberration of the year 2002, which resulted in one of the severest droughts in the recent past, the 2003 monsoon rainfall (June-September) was normal for the country as a whole, with seasonal precipitation at 102 per cent of its Long Period Average (LPA). The aggregate rainfall in 2003 was 92.2 centimeters against the LPA of 90.3 centimeters (Table 8.1).

8.2 The monsoon, delayed by a week, reached Kerala on June 8, 2003 and covered the entire country by July 5, 2003. Subsequent rainfalls were in general well distributed over time and space. However, certain regions of the country namely, interior Karnataka, Kerala and southern parts of Madhya Maharashtra received deficient rainfall in the season. At the end of the

monsoon season, 33 out of 36 Met sub-divisions had normal to excess rainfall, and 75 per cent of meteorological districts received normal/excess rainfall.

8.3 According to the Long Range Forecast of rainfall for the 2004 South-West Monsoon season (June-September) made by the India Meteorological Department (IMD), overall rainfall for the country as a whole is likely to be 100 per cent of the LPA with a model error of 4 per cent on both sides. The cumulative rainfall in the pre-monsoon period March-May 2004 at 16.2 cms was 125 per cent of the normal rainfall (12.9 cms).

Reservoir storage status

8.4 By the end of monsoon 2003, the total water availability in 71 major reservoirs was 78.76 BCM against 69.25 Billion Cubic Meter (BCM) in 2002 and last ten years' average of 96.89 BCM (Table 8.2).

Table 8.1 : Monsoon performance: 1997 to 2003
(June – September)

Year	Number of meteorological sub-divisions			Percentage of districts with normal/excess rainfall	Percentage of long period average rainfall for the country as a whole
	Normal	Excess	Deficient/scanty		
1997	26	6	3	81	102
1998	20	13	2	81	106
1999	25	3	7	67	96
2000	23	5	7	66	92
2001	29	1	5	68	92
2002	14	1	21	44	81
2003	26	7	3	75	102

Source : India Meteorological Department.

Table 8.2 : Reservoir storage
(At the end of the monsoon season)

	2003		2002		Avg. of last 10 years	
	Storage in BCM	Percent of FRL	Storage in BCM	Percent of FRL	Storage in BCM	Percent of FRL
At the beginning of monsoon season	14.30	11	15.70	12	22.45	17
At the end of monsoon season	78.76	60	69.25	53	96.89	74
Increase in monsoon season	64.46		53.56		74.43	
* Total Full Reservoir Level (FRL) i.e. designed utilizable capacity of 71 major reservoirs is 131.28 Billion Cubic Meter.						
Source : Central Water Commission						

Crop prospects 2003-04

8.5 Favourable monsoon helped in attaining a substantial increase in foodgrains production from 174.2 million tonnes in 2002-03 to 210.8 million tonnes in 2003-04, due to an increase in the production of both cereals and pulses (Table 8.3). There was also a significant

increase in the production of oilseeds and cotton in 2003-04 (Table 8.4). However, production of sugarcane experienced a fall for the second year in succession, mainly because of drought affecting the crop in the major producing areas of south Madhya Maharashtra and Karnataka (Table 8. 4).

Table 8.3 : Foodgrains production

(Million tonnes)

Crop/Year	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04*
Rice	81.7	82.5	86.1	89.7	85.0	93.3	72.7	86.4
Wheat	69.4	66.4	71.3	76.4	69.7	72.8	65.1	72.7
Coarse Cereals	34.1	30.4	31.3	30.3	31.1	33.4	25.3	36.8
Pulses	14.2	13.0	14.9	13.4	11.1	13.4	11.1	14.9
Foodgrains								
Kharif	103.9	101.6	102.9	105.5	102.1	112.1	87.8	110.5
Rabi	95.5	90.7	100.7	104.3	94.7	100.8	86.4	100.3
Total	199.4	192.3	203.6	209.8	196.8	212.9	174.2	210.8
* Third advance estimates Source : Ministry of Agriculture.								

Table 8.4 : Commercial crop production

(Million tonnes)

Crop	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04@
Groundnut	8.6	7.4	9.0	5.3	6.4	7.0	4.4	8.5
Rapeseed/ Mustard	6.7	4.7	5.7	5.8	4.2	5.1	3.9	5.9
Soyabean	5.4	6.5	7.1	7.1	5.3	6.0	4.6	7.6
Other oilseeds	3.7	2.7	3.0	2.5	2.5	2.6	2.2	3.0
Total nine oilseeds	24.4	21.3	24.8	20.7	18.4	20.7	15.1	25.0
Cotton*	14.2	10.9	12.3	11.5	9.5	10.0	8.7	13.5
Jute & Mesta**	11.1	11.0	9.8	10.6	10.6	11.7	11.4	11.2
Sugarcane	277.6	279.5	288.7	299.3	296.0	297.2	281.6	244.8
*Million bales of 170 kgs each; ** Million bales of 180 kgs each @ Third advance estimates								
Source : Ministry of Agriculture.								

Growth in agriculture

8.6 Agriculture & allied sector value added registered a growth rate of 9.1 per cent in 2003-04, reflecting the growth in physical production and remunerative prices of agricultural goods. The growth rate of the sector for 2003-04 was one of the highest in recent years, and only marginally lower than the previous high of 9.6 per cent achieved in 1996-97 (Table 8.5).

Plantation crops

8.7 The plantation sector comprising tea, coffee and rubber was plagued by a number of critical problems such as low prices, increasing cost of production, declining export volume and price realization in 2003-04. A general over-supply situation and the slowing down of consumption growth adversely affected the prices of these commodities.

8.8 To mitigate these problems and reenergize the plantation sector, Government took a series of measures in 2003-04. A separate fund for development, modernization and rehabilitation of the tea plantation sector was created by abolition of the excise duty of Re 1/kg on tea and its replacement by an additional excise duty of Re 1/kg by way of surcharge. The fund would be used for revival/rehabilitation package for closed tea gardens, encouraging production of orthodox tea for

Year	GDP*	GDP in agriculture and allied sectors*	Physical production of agriculture***
1992-93	5.1	5.8	4.2
1993-94	5.9	4.1	3.8
1994-95	7.3	5.0	5.0
1995-96	7.3	-0.9	-2.7
1996-97	7.8	9.6	9.3
1997-98	4.8	-2.4	-5.9
1998-99	6.5	6.2	7.6
1999-00	6.1	0.3	-0.6
2000-01	4.4	-0.1	-6.3
2001-02	5.8	6.5	7.6
2002-03	4.0	-5.2	-15.6
2003-04**	8.1	9.1	19.3

* At factor cost at 1993-1994 prices.
 ** Advance estimates.
 *** As determined by index of agricultural production (Base: triennium ending 1981-82).
 Source : Central Statistical Organisation (CSO) for GDP, and Ministry of Agriculture for production.

exports, assistance to the two major research and development (R&D) institutions in the tea sector in Assam and in Tamil Nadu, and for generic promotion of tea in India.

8.9 In order to provide protection to small coffee growers against volatility of coffee

Year	Production	Export		Import		Domestic Consumption
	Qty	Qty	Value	Qty	Value	Qty
1997-98	835.64	211.26	2003.15	2.61	17.79	602
1998-99	854.78	205.86	2191.84	8.93	64.73	620
1999-00	835.35	192.44	1932.66	10.36	61.97	638
2000-01	848.36	203.55	1889.78	15.23	95.47	658
2001-02	847.25	190.00	1695.78	16.02	82.70	678
2002-03	837.60	184.40	1665.04	19.67	90.91	698
2003-04*	850.49	180.43	1552.61	8.28	50.99	719

* Estimated
 Source : Ministry of Commerce and Industry.

prices, Government approved implementation of a price insurance scheme on pilot basis by the Coffee Board in collaboration with the Commodity Risk Management Group (CRMG) of the World Bank. The production, consumption and trade in respect of the plantation crops, viz. tea, coffee and natural rubber, are given in the Tables 8.6, 8.7 and 8.8, respectively.

Table 8.7 : Production, export and consumption of coffee					
(Lakh tonnes)					
Year	Production	Export			Domestic consumption
		Qty	Rs crore	US\$ million	
1990-91	1.70	1.00	279	108	0.54
1996-97	2.05	1.81	1467	452	0.55
1997-98	2.28	1.79	1708	477	0.50
1998-99	2.65	2.12	1752	431	0.50
1999-2000	2.92	2.45	1901	371	0.55
2000-01	3.01	2.47	1374	243	0.58
2001-02	3.01	2.13	1050	246	0.60
2002-03	2.75	2.07	1051	234	0.70
2003-04*	2.75	2.32	1156	262	N.A.
*Estimated		N.A. : Not available			

Table 8.8 : Natural rubber consumption, production and yield			
Year	Consumption ('000 Tonnes)	Production ('000 Tonnes)	Yield (Kg/ha)
1997-98	572	583	1549
1998-99	592	605	1563
1999-00	628	622	1576
2000-01	631	630	1576
2001-02	638	631	1576
2002-03	695	649	1592
2003-04*	718	711	1592
*Estimated.			
Source : Ministry of Commerce and Industry.			

Horticulture

8.10 Horticulture has been recognized as an important avenue for diversification in agriculture in an eco-friendly manner through efficient land use, optimum utilization of natural

resources and creation of employment opportunities, particularly for unemployed youth and women. The sector was given a boost by enhancing its outlay from Rs. 1,000 crore in the Eighth Plan, to Rs. 1,454 crore in the Ninth Plan and further to Rs. 2,105 crore in the Tenth Plan. As a result, the horticulture sector has grown significantly over the years. India has maintained leadership in the production of many commodities like mango, banana, coconut, arecanut, cashew, ginger, turmeric and black pepper (Table 8.9).

8.11 New initiatives taken in 2003-04 to boost the sector were:

- The centrally sponsored scheme on Technology Mission for integrated development of horticulture was extended to Himachal Pradesh, Jammu and Kashmir, and Uttaranchal in 2003-04.
- Additional cold storage facilities for 30.5 lakh tonnes were created under the cold storage scheme of the National Horticulture Board (NHB).
- The Central Government budget for 2003-04 announced the launching of schemes on Hi-Tech Horticulture & Precision Farming with an initial provision of Rs. 50 crore for 2003-04.
- A National Horticulture Mission with the objective of doubling horticulture production by 2010 was announced by the Prime Minister.

Livestock and fisheries

8.12 Livestock sector plays an important role in the national economy and in the socio-economic development of the country. Livestock sector produced 86.4 million tonnes of milk, 41.7 billion eggs, 52.1 million kgs of wool, 4.94 million tonnes of meat and 6.2 million tonnes of fish in 2002-03. The sector provides regular employment to 11 million in principal status and 9 million in subsidiary status. Women constitute 69 per cent of the labour force in livestock sector as against 35 per cent in crop farming. The livestock and fishery sector contributed 6.5 per cent to total GDP (5.4 per cent from live stock and 1.1 per cent from fisheries) in 2002-03.

Table 8.9 : Area and production of major horticultural crops*(Area: Million hectares, Production: Million tonnes)*

Crop	1999-2000		2000-2001		2001-2002 (Provsional)		2002-03 (Provsional)	
	Area	Production	Area	Production	Area	Production	Area	Production
Fruits	3.80	45.50	3.89	43.14	4.00	43.00	4.18	47.68
Apple	0.23	1.05	0.24	1.23	0.24	1.16	0.25	1.47
Banana	0.49	16.81	0.47	14.14	0.47	14.21	0.68	16.82
Citrus	0.53	4.65	0.50	4.40	0.62	4.80	0.60	4.72
Grapes	0.04	1.13	0.05	1.06	0.05	1.21	0.06	1.15
Guava	0.15	1.71	0.15	1.63	0.15	1.72	0.22	1.78
Litchi	0.05	0.43	0.05	0.40	0.06	0.40	0.05	0.44
Mango	1.49	10.50	1.52	10.06	1.58	10.02	1.60	10.78
Papaya	0.06	1.67	0.07	1.79	0.07	2.59	0.08	1.85
Pineapple	0.07	1.02	0.08	1.22	0.08	1.18	0.09	1.31
Sapota	0.06	0.64	0.07	0.74	0.05	0.60	0.07	0.71
Others	0.63	5.89	0.23	6.49	0.63	5.11	0.48	6.65
Vegetables	5.59	90.83	6.25	94.00	6.20	88.62	7.59	97.50
Brinjal	0.50	8.12	0.47	7.70	0.50	8.35	0.50	7.83
Cabbage	0.26	5.91	0.25	5.51	0.26	5.68	0.28	5.80
Cauliflower	0.25	4.72	0.26	4.69	0.27	4.89	0.28	4.80
Okra	0.35	3.42	0.35	3.34	0.35	3.32	0.37	3.53
Onion	0.49	4.90	0.45	4.72	0.50	5.25	0.53	5.45
Pea	0.27	2.71	0.32	3.01	0.30	2.04	0.35	3.20
Potato	1.34	25.00	1.21	22.44	1.25	24.45	1.37	25.00
Tomato	0.46	7.43	0.46	7.24	0.46	7.46	0.54	7.60
Others	2.07	28.63	2.48	35.35	2.31	27.18	3.37	34.74
Flowers	0.09	0.52	0.10	0.56	0.11	0.54	0.15	0.70
Spices	2.50	3.02	2.50	3.02	3.22	3.77	-	-
Cashew nut	0.69	0.52	0.72	0.45	0.74	0.46	0.73	0.47
Areca nut	0.29	0.33	0.29	0.33	0.29	0.33	-	-
Coconut*	1.77	12.23	1.82	12.68	1.89	12.82	-	-
Other horticultural crops	NA	1.75	0.11	0.15	0.12	0.17	0.13	0.19

NA: Not available * - Production in thousand million nuts
Source : Ministry of Agriculture.

8.13 India owns one of the largest livestock population in the world and has now become the largest global producer of milk. The production and per capita availability of milk in the country are given in Table 8.10.

8.14 India is the sixth largest producer of fish and second largest producer of inland fish in

the world. Fisheries sector is recognized as a powerful generator of income and employment. It is also a source of cheap and nutritious food besides being a major foreign exchange earner. The trends of fish production and export are presented in Table 8.11.

Table 8.10 : Production and per capita availability of milk		
Year	Milk production (Million tonnes)	Per capita availability (Gms./day)
1950-51	17.0	124
1960-61	20.0	124
1970-71	22.0	112
1980-81	31.6	128
1990-91	53.9	176
2000-01	80.8	215
2001-02	84.3	221
2002-03*	86.4	226
* Provisional		
Source : Department of Animal Husbandry and Dairying.		

Table 8.11 : Production and export of fish and marine products					
Year	Fish production (million tonnes)			Export of marine products	
	Marine	Inland	Total	Quantity ('000 tonnes)	Value (Rs crore)
1950-51	0.5	0.2	0.7	20	2
1960-61	0.9	0.3	1.2	20	4
1970-71	1.1	0.7	1.8	40	35
1980-81	1.5	0.9	2.4	80	235
1990-91	2.3	1.5	3.8	140	873
2000-01	2.8	2.8	5.6	503	6,296
2001-02	2.9	3.1	5.9	468	5,898
2002-03	3.0	3.2	6.2	502	6,683
Source : Department of Animal Husbandry and Dairying.					

8.15 The major thrust of the policies and programmes of the Government of India relating to livestock and fisheries is in the areas of rapid genetic upgradation of milch animals, improvement in the delivery mechanism of breeding inputs, control of animal diseases, creation of disease free zones, increased availability of nutritious feed and fodder, development of dairy activities and backyard poultry, development of processing and marketing facilities and enhancement of production and profitability of livestock and fisheries enterprises.

II. Agricultural inputs

Irrigation

Accelerated Irrigation Benefits Programme (AIBP)

8.16 As large number of river valley projects, both multipurpose and irrigation, have spilled over from plan to plan, mainly because of financial constraints being faced by the State Governments, the Government of India launched the Accelerated Irrigation Benefits Programme during 1996-97 for accelerating implementation of ongoing irrigation/multi-purpose projects on which substantial progress has been made and which are beyond the resources capability of the State Governments and for other major and medium irrigation projects which are in advanced stage of construction and could yield irrigation benefits in next four agricultural seasons.

8.17 Funds under this programme are provided to the States in the form of Central Loan Assistance. A Fast Track Programme for completion of major and medium irrigation projects which can be completed in one year (two working seasons) with full central assistance was introduced in February, 2002. The States were categorized as reforming States if the water rates were rationalized to recover full operation and maintenance costs and such States became eligible for better ratio to avail Central Loan Assistance.

8.18 With effect from 1.04.2004, the grant component has been included in AIBP with 70% loan and 30% grant for General Category States and 10% loan and 90% grant for Special Category States for projects under Fast Track Programme. For projects not under Fast Track an incentive of conversion of loan to grant criteria as mentioned above shall be given if projects are completed on schedule. The time limit for completion of Fast Track Projects has been extended to three working seasons and for projects under normal funding to 6-8 working seasons.

8.19 So far, an amount of Rs.14670 crore has been released as CLA under this programme for 181 major/medium and 3810 Surface Minor Irrigation Schemes. After commencement of the programme 28 major/

medium projects have been completed and an irrigation potential of 2195 thousand hectares has been created under AIBP upto March 2003. The potential of 67.35 thousand hectares has been created through Surface MI Schemes under AIBP upto March 2004.

Command area development and water management programme

8.20 The Programme was taken up in the 1974-75. So far the programme has been implemented in 276 project commands with total Cultivable Command Area of 26.78 Million hectares (Mha.). Works have been completed in 15.75 Mha for which central assistance of Rs.2,601 crore was released to various States. Major constraints in the implementation of the programme were (i) unreliability of water supply at outlet, (ii) gap between available technology and its adoption, and (iii) lack of participation of farmers. To overcome these constraints and to make the programme more effective, the programme was restructured by retaining only those components, which are beneficial to the farmers, and including new components for correcting deficiencies in water supply and improving drainage systems. The restructured programme is being implemented.

8.21 Major achievements of command area development programme include the following:

- 29 per cent rise in irrigation intensity from 89 per cent to 118 per cent in Chambal Command (Rajasthan).
- 56 per cent rise in water use efficiency in Eastern Yamuna Command (UP).
- Water consumption reduced from 7.27 M3/T.ha (planned use) to 4.17 M3/T.ha in Periyar-Vaigai command (Tamil Nadu).
- 32.5 per cent increase in paddy production and 16 per cent rise in wheat production in 6 years in Sharda canal command (U.P).
- 120 per cent rise in paddy in 10 years in Periyar-Vaigai Command (Tamil Nadu).
- 76 per cent increase in farm income in 21 years in Chambal Command (Rajasthan).

Agricultural credit

8.22 The total credit flow to agriculture in the Ninth Plan (1997-2002) amounted to Rs.2,29,956 crore. A substantial jump in the credit flow to agriculture is envisaged in the Tenth Plan (2002-07) which is projected at Rs 7,36,570 crore, almost three times the Ninth Plan achievement. Although there was a substantial increase in the agriculture credit in the first two years of the Tenth Plan, the increase was not commensurate with the plan projection (Table 8.12).

Table 8.12 : Flow of institutional credit to agriculture

(Rs crore)

Institutions	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04 (Estimated)
Co-operative Banks	14,085	15,957	18,363	20,801	23,604	24,296	30080
Share (%)	44	43	40	39	38	34	38
Short-term	10,895	12,571	14,845	16,583	18,828	20,247	23920
Medium/Long-term	3,190	3,386	3,518	4,218	4,776	4,049	6160
Regional Rural Banks	2,040	2,460	3,172	4,219	4,854	5,467	6080
Share (%)	6	7	7	8	8	8	8
Short-term	1,396	1,710	2,423	3,245	3,777	4,156	4680
Medium/Long-term	644	750	749	974	1,077	1,311	1400
Commercial Banks	15,831	18,443	24,733	27,807	33,587	41,047	43840
Share (%)	50	50	53	53	54	58	55
Short-term	8,349	9,622	11,697	13,486	17,904	21,878	23400
Medium/Long-term	7,482	8,821	13,036	14,321	15,683	19,169	20440
Total	31,956	36,860	46,268	52,827	62,045	70,810	80000
Per cent increase	21	15	26	14	17	14	13

Source : NABARD.

8.23 In view of the dissatisfaction expressed by the farming community about the benefit of falling interest rate regime not reaching them, the public sector banks have been advised to reduce their lending rate for agriculture to a rate not exceeding 9 per cent per annum on loans up to Rs.50, 000. The banks were also advised to ensure that the volume of credit to the agriculture sector does not decline because of the reduction in interest rate. According to an announcement made by the Government on June 18, 2004, the flow of institutional credit would be enhanced by 30 per cent to about Rs. 105,000 crore in 2004-05 from Rs. 80,000 crore in 2003-04.

Kisan credit card scheme

8.24 The Kisan Credit Card Scheme, introduced in 1998-99, has become very popular among the farmers. A total of 413.79 lakh Kisan Credit Cards were issued and cumulative

credits amounting to Rs.97,710 crore were sanctioned up to March 2004 (Table 8.13).

Self-help group bank linkage programme

8.25 The focus under the Self-help Group (SHG) Bank Linkage Programme is largely on those rural poor who have no sustainable access to the formal banking system. The target groups, therefore, broadly comprise small and marginal farmers, agricultural and non-agricultural labourers, artisans and craftsmen and other poor engaged in small businesses like vending, and hawking.

8.26 By March 2004, over 1.7 crore rural poor families accessed financial services of savings and credit through 10.79 lakh credit-linked SHGs. Around 90 per cent of these SHGs are exclusive women SHGs. More than 30,000 branches and 500 banks which participate in the Programme have extended

Table 8.13 : Number of Kisan Credit Cards and amount sanctioned

Agency	2000-2001		2001-2002		2002-2003		2003-2004		Cumulative progress	
	No. of cards issued (lakh no.)	Amt. sanc. (Rs cr)	No. of cards issued (lakh no.)	Amt. sanc. (Rs cr)	No. of cards issued (lakh no.)	Amt. sanc. (Rs cr)	No. of cards issued (lakh no.)	Amt. sanc. (Rs cr)	No. of cards issued (lakh no.)	Amt. sanc. (Rs cr)
Coop. Banks	56.14	9412	54.36	15952	45.79	15841	48.78	9855	242.58	55492
RRBs	6.48	1400	8.33	2382	9.64	2955	12.74	2599	38.99	9753
Comm. Banks	23.90	5615	30.71	7524	27.00	7481	30.73	6835	132.22	32465
Total	86.52	16427	93.41	25858	82.43	26278	92.25	19289	413.79	97710

Source : NABARD.

Table 8.14 : SHG bank linkage programme

Year	Number of SHGs financed	Growth (%)	Cumulative Number of SHGs	Bank Loan (Rs. crore)		
				Amount	Growth (%)	Cumulative
1992-1999	32,995	-	32,995	57	-	57
1999-2000	81,780	148	114,775	136	138	193
2000-2001	149,050	82	263,825	288	112	481
2001-2002	197,653	33	461,478	545	89	1026
2002-2003	255,882	29	717,360	1022	87	2049
2003-2004	361,731	41	1,079,091	1855	81	3904

Source : NABARD.

loans amounting to Rs. 3,904 crore by March 31, 2004, backed by refinance support of Rs.2,124 crore from NABARD (Table 8.14).

Rural Infrastructure Development Fund (RIDF)

8.27 Rural Infrastructure Development Fund (RIDF) set up in 1995-96 with the NABARD, received an increased allocation of Rs.5,500 crore in 2002-03 towards RIDF-VIII, of which an amount of Rs.500 crore was earmarked for projects to be implemented by PRIs/SHGs/NGOs or similar other organizations, and Rs.600 crore for States in the North-Eastern Region. As announced in the Union Budget 2002-03, sanction of loans under RIDF VIII was to be linked to reforms in agriculture and rural sectors. The reforms linked sanctions were further taken ahead in 2003-04 under RIDF IX. Incentives in the form of higher allocation/sanction of loans were made available to States, which are rated higher for initiating reforms in agriculture and rural development. The RIDF came to an end with the commencement of the Lok Nayak Jai Prakash Narayan Fund in February 2004. Financing would be arranged for the Lok Nayak Jai Prakash Narayan Fund initially from the

banks having shortfall in mandatory agricultural lending at the same rate of interest as applicable to the last RIDF (6 per cent or less) (Box 8.1).

Seeds

8.28 The National Seeds Policy, 2002 provides the framework for growth of the seed sector. It seeks to provide the farmers with a wide range of superior quality seed varieties and planting materials. The production/distribution of Certified/Quality Seeds in recent years is given in Table 8.15.

8.29 As a part of India's obligation under TRIPs Agreement of the WTO, the Protection of Plant Varieties and Farmers' Rights Act 2003 was enacted to protect the intellectual property rights of plant breeders and to stimulate investments in R&D for the development of new plant varieties. The Act involves setting up of an Authority for implementing the provisions of the Act. Necessary rules and regulations under the Act have been notified.

8.30 A draft Seeds Bill has been formulated to replace the Seeds Act, 1966. The Bill provides for compulsory registration of seeds

Box 8.1 : Lok Nayak Jai Prakash Narayan Fund (Agriculture Infrastructure and Credit Fund)

Finance Minister in his interim Budget speech (February 2004) announced creation of a fund known as Lok Nayak Jai Prakash Narayan Fund, which will replace the existing RIDF. Activities such as rural connectivity, primary health center, major irrigation and medium irrigation which are currently covered under RIDF will not be included under the new fund at this stage. The fund was operationalised on February 17, 2004.

NABARD has prepared the scheme broadly with the following three components:

- A. Finance for infrastructure through State Governments (Rs. 30000 crore).
Eligible clients are State Governments, State undertakings and corporations, Panchayati Raj Institutions, other local bodies etc.
Activities include minor irrigation, rainfed agriculture, flood control, public sector cold storage facilities etc.
- B. Finance for investments in agriculture and commercial infrastructure through banking system (Rs. 18,000 crore).
Eligible clients are corporates, NGOs, individuals etc.
Activities include priority areas like micro irrigation, rainfed agriculture, post-harvest related support, agriculture marketing, investment credit etc.
- C. Development measures and Risk Management Mechanism (Rs. 2000 crore)

In the first year of operation (2004-05), funds required are around Rs. 12,000 crore, which would be available from the commercial banks' contribution to the funds on account of their shortfall in mandatory agricultural lending. Additional funds required for this purpose in the subsequent years would be raised through market borrowings by the NABARD.

Since the NABARD would be receiving funds with a rate of interest around 6 to 6.5 per cent, it would be possible to provide funds to the borrowers at an interest rate of 2 per cent below the PLR.

Table 8.15 : Production and distribution of quality seeds

Type of Seeds	Unit	1999-2000	2000-2001	2001-2002	2002-2003	2003-04 Anticipated	2004-05 Target
Breeder Seed Production	'000 quintals	51	43	46	49	50	51
Foundation Seed Production	'000 quintals	466	591	544	600	650	700
Certified/Quality Seed Distribution	'000 quintals	8,798 (7,296)	8,627 (7,092)	9,180 (7,565)	9,300	11,700	12,740
Note : Data in parenthesis are of certified seed distribution.							
Source : Ministry of Agriculture.							

on the basis of their performance, deregulation/decontrol of seed industry/processing units and imposition of more stringent penalties to check the sale of spurious seeds.

8.31 The Government set up a high level Task Force on Agriculture-Related Applications of Biotechnology under the chairmanship of Dr. M.S Swamination to formulate a long-term policy on agro-biotechnology; suggest modifications in the existing administrative and procedural arrangements in various Ministries/Organisations and to suggest the role of Ministry of Agriculture on matters relating to development and application of biotechnology in agriculture. The Task Force has already submitted its report.

8.32 To encourage export of seeds, the procedures for seed exports have been simplified. Seeds of privately developed varieties/hybrids will be allowed to be exported freely subject to the provision of the EXIM Policy (2002-2007), except where there is an emergency caused by natural calamities and seed is required for meeting the domestic demand. Imports of seeds and planting materials are also allowed subject to the New Policy on Seed Development 1988 and the provisions of the Exim Policy, 2002-07.

Agricultural insurance

National Agricultural Insurance Scheme (NAIS)

8.33 In place of the Comprehensive Crop Insurance Scheme (CCIS), Government

introduced a new scheme entitled 'National Agricultural Insurance Scheme' (NAIS) from Rabi 1999-2000 season. The scheme is available to all farmers (both loanee and non-loanee) irrespective of their size of land holdings. It envisages coverage of all the food crops (cereals, millets and pulses), oilseeds and annual commercial/ horticultural crops, in respect of which past yield data are available for an adequate number of years. Already eleven crops, viz. annual banana, chillies, cotton, ginger, jute, pineapple, onion, potato, sugarcane, tapioca and turmeric, have been covered under the scheme. All other annual commercial/ horticultural crops will be placed under insurance cover in due course of time subject to availability of past yield data.

8.34 The premium rates are 3.5 per cent (of sum insured) for bajra and oilseeds, 2.5 per cent for other kharif crops, 1.5 per cent for wheat, and 2 per cent for other Rabi crops, while actuarial rates are being charged in the case of commercial/horticultural crops. Small and marginal farmers are entitled to a subsidy of 50 per cent of the premium, which is shared on 50:50 basis by the Central and State Governments. The premium subsidy will be phased out over a period of 5 years.

8.35 The scheme is operating on the basis of 'Area Approach', i.e. defined areas for each notified crops for widespread calamities, and on 'an individual basis' for localised calamities such as hailstorm, landslide, cyclone and flood. At present, the scheme is being

implemented by the following 23 States and 2 Union Territories :

- | | |
|----------------------------------|---------------------|
| 1. Andhra Pradesh | 2. Assam |
| 3. Bihar | 4. Goa |
| 5. Gujarat | 6. Himachal Pradesh |
| 7. Karnataka | 8. Kerala |
| 9. Maharashtra | 10. Madhya Pradesh |
| 11. Meghalaya | 12. Tamil Nadu |
| 13. Uttar Pradesh | 14. West Bengal |
| 15. Sikkim | 16. Chattisgarh |
| 17. Jharkhand | 18. Tripura |
| 19. Orissa | 20. Jammu & Kashmir |
| 21. Uttaranchal | 22. Haryana |
| 23. Rajasthan | 24. Pondicherry |
| 25. Andaman and Nicobar Islands. | |

8.36 Details of farmers covered, area covered, sum insured, insurance charges, area coverage and indemnity claims under NAIS in last six seasons i.e. from Rabi 2000-01 to Kharif 2003 are given in Table 8.16.

Farm Income Insurance Scheme (FIIS)

8.37 In order to target the two critical components of a farmer's income, namely yield and price, through a single policy instrument, the Department of Agriculture & Cooperation formulated the Farm Income Insurance Scheme (FIIS). This Scheme was conceived to provide income protection to the farmers by integrating the mechanism of insuring production as well as market risks. The main features of the scheme are given in Box 8.2. Initially the scheme has been taken up on a pilot basis in Rabi 2003-04 in 18

Box 8.2 : Main features of the Farm Income Insurance Scheme (FIIS)

- Farmers will be protected by ensuring minimum guaranteed income.
- If the actual income of the farmers falls short of the guaranteed income (product of average yield and MSP) of the farmers they would be eligible for compensation to the extent of indemnity from the Agriculture Insurance Company of India Ltd. (AICI).
- Area approach as in NAIS would be used for actual yield and price measurement of the insured crop.
- Initially the scheme would cover paddy and wheat only.
- The Scheme would be available for all the States and would be compulsory for farmers availing crop loans.
- NAIS will be withdrawn for the crops covered under FIIS but would continue to be applicable for other crops.

districts of 12 States for wheat and paddy. Based on the outcome of the pilot implementation, the scheme would be appropriately fine-tuned as necessary.

Fertilizer

Fertilizer consumption

8.38 Fertilizer consumption increased by more than three times from 5.5 million tonnes in 1980-81 to 18.07 million tonnes in 1999-2000. However, the growth of the fertilizer

Table 8.16 : Performance of the National Agricultural Insurance Scheme

Sl. No.	Particulars	Rabi 2000-01	Kharif 2001	Rabi 2001-02	Kharif 2002	Rabi 2002-03	Kharif 2003	Total
1.	Farmers Covered (in lakh)	20.92	86.96	19.55	97.65	23.27	79.69	328.04
2.	Sum Insured (Rs in crore)	1602.68	7502.46	1497.51	9429.44	1837.53	8110.13	29979.75
3.	Insurance Charges (Rs in crore)	27.79	261.62	30.15	325.38	38.50	283.14	966.58
4.	Area coverage (in lakh ha)	31.11	128.88	31.46	155.22	40.38	122.89	509.94
5.	Total Claims (Rs in crore)	59.49	492.63	64.66	1821.79	193.03	191.92	2823.52
6.	Claims Paid (Rs in crore)	59.25	492.32	64.37	1754.28	114.15	12.02	2496.39

Table 8.17 : Consumption of fertilizer in nutrient terms

('000 tonnes of nutrients)

Fertilizers	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04*
Nitrogenous Fertilizers	11,354	11,592	10,920	11,310	10,474	11,324
Phosphatic Fertilizers	4,112	4,799	4,215	4,382	4,019	4,402
Potassic Fertilizers	1,332	1,678	1,567	1,667	1,601	1,748
All Fertilizers (NPK)	16,798	18,069	16,702	17,360	16,094	17,474
Percentage increase	3.77	7.57	-7.57	3.94	-7.29	8.57

* Estimated
Source: Ministry of Agriculture

Table 8.18 : Per hectare consumption of N.P.K. fertilizers for cropped area in 2002-03

S. No.	State / U.T.	2001-02	2002-03
1.	Andhra Pradesh	143.46	128.44
2.	Karnataka	101.48	90.91
3.	Kerala	60.72	68.17
4.	Tamil Nadu	141.55	114.00
5.	Gujarat	85.52	77.76
6.	Madhya Pradesh+	39.96	36.44
7.	Maharashtra	78.24	73.80
8.	Rajasthan	38.88	28.54
9.	Haryana	155.69	152.79
10.	Himachal Pradesh	41.40	41.50
11.	Jammu & Kashmir	64.55	60.12
12.	Punjab	173.38	174.99
13.	Uttar Pradesh++	130.44	126.51
14.	Bihar+++	87.39	87.15
15.	Orissa	40.91	34.09
16.	West Bengal	126.82	122.23
17.	Arunachal Pradesh	2.88	2.84
18.	Assam	38.81	42.73
19.	Tripura	30.45	22.02
20.	Manipur	104.94	135.18
21.	Meghalaya	17.16	16.77
22.	Nagaland	2.13	1.86
23.	Mizoram	13.72	20.55
24.	Sikkim	9.72	10.33
All India		90.12	84.82

+ Includes Chhatisgarh ++includes Uttaranchal
+++Includes Jharkhand
Source: Ministry of Agriculture

consumption has been erratic for the last three/four years (Table 8.17). Due to poor monsoon, the consumption of fertilizer was lower in 2002-03 than in 1999-2000. The fertilizer consumption bounced back in 2003-04, a good monsoon year, although it still remained below the 1999-2000 level.

8.39 There was a fall in per capita consumption of fertilizer from 90.12 kg/hectare in 2001-02 to 84.82 kg/hectare in 2002-03 (Table 8.18). There is a great deal of variability in per capita consumption of fertilizer; it varies from 174.99 kg/hectare in Punjab to 28.54 kg/hectare in Rajasthan.

Fertilizer production

8.40 Domestic production of fertilizer (N & P) in 2003-04 was marginally less than that in 2002-03. However, with higher imports, the total availability of fertilizer in 2003-04 was of the same order (Table 8.19).

Pricing, control and subsidy

8.41 To encourage balanced fertilizer use and make fertilizer available to farmers at affordable prices, the Central Government determines and notifies the selling price of urea and decontrolled P&K fertilizers such as the Di-ammonium Phosphate (DAP), Muriate of Potash (MOP), Single Super Phosphate (SSP) and complexes. The current selling prices of urea and P&K fertilizers are given in Table 8.20. Since the selling prices of fertilizers are less than the cost of production, the difference between the selling price and the cost of production as assessed by the Government is borne as subsidy. Subsidy on urea in

Table 8.19 : Fertilizer production, imports and subsidies

Year	Production		Imports	Subsidy			Total
	Nitrogen	Phosphate	N+P+K	Imported Urea	Domestic Urea	Decontrolled P&K Fertilizer	
	('000 tonnes)			(Rs crore)			
1960-61	98	52	419	—	—	—	—
1970-71	830	229	629	—	—	—	—
1980-81	2,164	841	2,759	335	170	—	505
1990-91	6,993	2,052	2,758	659	3,730	—	4,389
2000-01	10,962	3,743	2,090	1	9,480	4,319	13,800
2001-02	10,768	3,860	2,398	47	8,044	4,504	12,595
2002-03	10,562	3,904	1,757	0	7,790	3,224	11,014
2003-04	10,632	3,568	2,018	0	8,521	4,046	12,567

Source : Ministry of Chemical & Fertilizer.

Table 8.20 : Current selling prices of fertilizers

(Rs per tonne)

Type of fertilizer	Selling price
Urea	4,830
Di-ammonium Phosphate	9,350
Complex Fertilizers	6,980-9,080
Single Super Phosphate	Varies from State to State

Source : Ministry of Chemical & Fertilizer.

2003-04 is estimated to be at Rs.8,521 crore and that on decontrolled phosphatic and potassic fertilizers at Rs.4, 046 crore, resulting in the total subsidy burden order of Rs.12, 567 crore in 2003-04.

Rationalization of fertilizer subsidy policies

8.42 Given the importance of fertilizer pricing and subsidization for the growth and viability of the fertilizer industry and agriculture, the need for streamlining the subsidy to urea units has been on the agenda of the Government for a long time. A New Pricing Scheme (NPS) for urea units for replacing the existing Retention Pricing Scheme (RPS) came into effect from April 1, 2003. The NPS is being implemented in stages. Stage-I coincided with the fiscal year 2003-04 and Stage-II covers the two years of 2004-05 and 2005-06. In respect of complex fertilizers, a more rational pricing formula has been brought into implementation.

Policy initiatives in hand

8.43 For bridging the gap between the demand and supply of urea in the medium term, Government is in the process of formulating a policy for new units and expansion of existing urea units, de-bottlenecking leading to higher capacity, and conversion of existing costlier feedstock units to gas/LNG based units. The proposed policy for new units and expansion of existing urea projects will encourage private investment in urea plants. Equally important is the firming up of policy for conversion of existing non-gas based urea units to natural gas(NG)/Liquified Natural Gas (LNG), which are clean, efficient and cost-effective sources of energy. While at present natural gas based plants account for more than 60 per cent of urea capacity, balance capacity is based on naphtha, fuel oil and LSHS as feedstock. Switchover of non-gas based urea units to NG/LNG will result in substantial savings in the subsidy on account of reduced cost of feedstock and resultant energy savings.

8.44 Government is in the process of facilitating the switchover of the existing non-gas based urea units to NG/LNG. The exact time schedule for conversion of non-gas based urea units will depend on the additional availability of NG through new gas fields and imported LNG and the delivered price of NG/LNG. In the first instance, those naphtha-based plants, which are in the vicinity of the HBJ Pipeline, will convert to NG/LNG.

Agricultural mechanization

8.45 Power availability for carrying out various agricultural operations has been increasing to reach a level of 1.231 kw/ha in 2001-02 from only 0.295 kw/ha in 1971-72. This increase was the result of increasing use of tractor, power tiller, combine harvesters, irrigation pumps and other power-operated machines. The share of mechanical power has increased from 39.63 per cent in 1971-72 to 83.62 per cent in 2001-02. As in the past, the sale of tractors and power tillers in 2002-03 was the highest in the states of Uttar Pradesh and West Bengal (Table 8.21). Efforts are on to encourage the farmers to adopt technologically advanced agricultural equipments in order to carry farm operations timely and precisely, and to economize the agricultural production process.

Capital formation in Indian agriculture

8.46 The decline in the share of agriculture sector's capital formation in GDP from 1.9 per cent in the early 1990s to 1.3 per cent in the early 2000s is a matter of concern (Table 8.22). This declining share was due mainly to the stagnation or fall in public investment in agriculture, particularly since the mid-1990s.

However, there is indication of a reversal of this trend of late with the public sector investment in agriculture attaining a 5-year high in 2002-03.

III. Agri-Trade

Agri-exports

8.47 Agricultural exports increased from \$5.9 billion in 2001-02 to \$6.7 billion in 2002-03 (Table 8.23). However, as a percentage of total merchandise exports, the share of agri-exports declined from 13.5 per cent in 2001-02 to 12.8 per cent in 2002-03. Marine products, contributing around 20 per cent of the total agri-exports, is amongst the dominant items of the agri-exports of the country. The exports of food grains (rice and wheat) have picked up considerably in recent years, accounting for around 20 per cent of the agri-exports. The Government's special efforts to encourage export of foodgrains in recent years through grant of WTO compatible subsidies has placed India as one of the leading exporters of food grains in the international market.

8.48 Exim Policy 2002-07 emphasized the importance of agricultural exports and announced the following policy measures to

Table 8.21 : Sale of tractors and power tillers (Nos)

STATES	Tractors		STATES	Power tillers	
	Total sale during last five years	Average annual sale		Total sale during last five years	Average annual sale
Uttar Pradesh	290513	58102	West Bengal	25537	5107
Madhya Pradesh	144049	28810	Tamil nadu	9563	1913
Punjab	121903	24381	Assam	7575	1515
Rajasthan	95450	19090	Karnataka	6737	1347
Haryana	89346	17869	Kerala	4954	991
Gujarat	76439	15288	Orissa	4862	972
Bihar	72467	14493	Andhra Pradesh	3784	757
Andhra Pradesh	68994	13799	Maharashtra	2656	531
Maharashtra	66876	13375	Tripura	1705	341
Karnataka	43163	8633	Gujarat	1530	306
Tamil Nadu	38852	7770	Bihar	1160	232
Orissa	15473	3095			
Other States/UTs and Export etc.	65210	13042	Other States/UTs	5503	1101
All India	1188735	237747	All India	75566	15113

Source : Ministry of Agriculture.

Table 8.22 : Gross capital formation in agriculture at 1993-94 prices

(Rs crore)

Year	Total	Public	Private	Percent share		Investment in agriculture as per cent of GDP
				Public	Private	
1990-91	14836	4395	10441	29.6	70.4	1.9
1991-92	13389	3871	9518	28.9	71.1	1.7
1992-93	14508	4076	10432	28.1	71.9	1.8
1993-94	13523	4467	9056	33.0	67.0	1.6
1994-95	14969	4947	10022	33.0	67.0	1.6
1995-96	15690	4849	10841	30.9	69.1	1.6
1996-97	16176	4668	11508	28.9	71.1	1.5
1997-98	15942	3979	11963	25.0	75.0	1.4
1998-99	14895	3870	11025	26.0	74.0	1.3
1999-00	17304	4221	13083	24.4	75.6	1.4
2000-01	16906	3927	12979	23.2	76.8	1.3
2001-02	17328	4127	13201	23.8	76.2	1.3
2002-03*	18657	4538	14119	24.3	75.7	1.3

* Quick estimates
Source : Central Statistical Organisation.

Table 8.23 : Agricultural exports

	2001-02		2002-03		2002-03 (April-Feb.)		2003-04 (April-Feb.)	
	Million US Dollar	Percent share of agri-exports	Million US Dollar	Percent share of agri-exports	Million US Dollar	Percent share of agri-exports	Million US Dollar	Percent share of agri-exports
Tea	360.5	6.1	343.6	5.1	320.3	5.3	317.1	4.9
Coffee	229.6	3.9	205.5	3.1	180.6	3.0	201.4	3.1
Rice	665.5	11.3	1238.1	18.4	1106.0	18.2	799.7	12.3
Wheat	278.9	4.7	363.6	5.4	339.0	5.6	453.2	7.0
Sugar & Molesses	373.6	6.3	375.1	5.6	304.2	5.0	258.3	4.0
Tobacco	169.3	2.9	212.5	3.2	181.0	3.0	205.4	3.2
Spices	313.9	5.3	342.8	5.1	314.2	5.2	286.4	4.4
Cashew	375.1	6.4	424.2	6.3	396.4	6.5	331.5	5.1
Sesame and Niger Seeds	127.9	2.2	93.2	1.4	82.9	1.4	141.7	2.2
Guargum Meal	84.5	1.4	100.6	1.5	87.9	1.4	100.2	1.5
Oil meals	474.5	8.0	308.8	4.6	286.4	4.7	563.1	8.7
Fruits & Vegetables	262.8	4.5	300.2	4.5	258.2	4.2	385.1	5.9
Processed Fruits & Vegetables	107.5	1.8	118.8	1.8	109.5	1.8	66.4	1.0
Meat & Meat Preparations	250.2	4.2	284.6	4.2	263.1	4.3	310.3	4.8
Marine Products	1236.8	21.0	1431.6	21.3	1303.6	21.5	1218.8	18.7
Others	590.4	10.0	611.1	9.1	542.9	8.9	867.3	13.3
Agricultural Exports	5901.0	100.0	6734.0	100.0	6076.0	100.0	6506.0	100.0
Total Exports	43826.7		52719.4		47136.1		55716.7	
Agri Exports as per cent of Total Exports		13.5		12.8		12.9		11.7

Source : DGCI&S, Kolkata

boost agri-exports :

- Free exportability of all agricultural products except onion and niger seed, export of which are canalized through approved agencies.
- Removal of procedural restrictions like requirement for registration, packaging, etc.
- Setting-up of Agri-export zones to enhance international market access and improve infrastructure facilities, and ensure better flow of credit.
- Assistance for reducing the marketing costs such as transportation, handling and processing of export of selected agricultural commodities.
- Financial assistance for improved packaging, strengthening of quality control mechanism and modernization of processing units.
- Arranging promotion campaign such as buyer-seller meets and participation in important international fairs and exhibition.

Agri-imports

8.49 The imports of agricultural products increased to \$2.8 billion in 2002-03 from \$2.3 billion in 2001-02. The share of agri-imports in total merchandise imports increased from

4.5 per cent to 4.6 per cent over the same period (Table 8.24). Edible oil, which accounts for almost two-thirds of the total agri-imports, is the single largest item of agri-imports in to the country. The dominant share of this item continued to persist even in 2003-04. Imports of pulses are also significant and accounted for 20-30 per cent of agri-imports, although its share declined to 14 per cent in 2003-04.

Agricultural marketing

8.50 Marketing of agricultural produce is the most important activity for the farming community, particularly for those who are small producers and have small surpluses for marketing. To protect the interests of farmers, Government promoted organised marketing of agricultural commodities through a network of regulated markets. However, studies indicate that the institutions of regulated markets have achieved limited success, as these markets restricted development of direct and free marketing, smooth raw material supplies to agro-processers, information exchange and adoption of innovative marketing systems and technologies.

8.51 To benefit the farming community from new market access opportunities, the internal agricultural marketing system in the country needs to be integrated and strengthened. In

Table 8.24 : Agricultural imports

	2001-02		2002-03		2002-03 (April-Feb.)		2003-04 (April-Feb.)	
	Million US Dollar	Percent share of agri- imports	Million US Dollar	Percent share of agri- imports	Million US Dollar	Percent share of agri- imports	Million US Dollar	Percent share of agri- imports
1 Cereals	18.2	0.8	24.5	0.9	22.5	0.9	15.9	0.5
2 Pulses	662.6	28.9	565.6	20.2	529.5	20.9	449.9	13.7
3 Milk & Cream	1.8	0.1	2.0	0.1	1.7	0.1	19.3	0.6
4 Cashew Nuts	90.4	3.9	256.1	9.1	250.4	9.9	290.6	8.9
5 Fruits & Nuts Excl. Cashew Nuts	158.7	6.9	132.6	4.7	119.1	4.7	150.2	4.6
6 Sugar	6.8	0.3	6.8	0.2	6.7	0.3	9.2	0.3
7 Oil Seeds	0.3	0.0	2.4	0.1	2.3	0.1	2.5	0.1
8 Vegetable Oils Fixed(Edible)	1355.6	59.1	1814.2	64.7	1597.4	63.1	2344.7	71.4
Agricultural Imports	2294.4	100.0	2804.1	100.0	2529.6	100.0	3282.2	100.0
Total Imports	51413.3		61412.1		54877.9		69034.6	
Agri Import as per cent of Total Imports	4.5		4.6			4.6		4.8

Source : DGCI&S, Kolkata

this context, an inter-Ministerial Task Force set up by the Ministry of Agriculture suggested a package of reform measures, such as amendments in the State APMC Act to encourage development of competitive agricultural markets in the private and cooperative sectors, and deregulation of marketing system to promote private investment in marketing infrastructure.

8.52 The Department of Agriculture & Cooperation has formulated a Model Law on Agricultural Marketing and Contract Farming in consultation with the State Governments and representatives of trade and industry. The salient features of the Model Law are given in the Box 8.3.

Box 8.3 : Salient features of the Model Act for State Agricultural Produce Marketing (Development and Regulation) Act, 2003

- Legal persons, growers and local authorities permitted to establish new markets in any area.
- No compulsion on growers to sell their produce through existing regulated markets.
- Establishment of direct purchase centers, Consumers/Farmers Markets for direct sale.
- Promotion of Public-Private Partnership in the management and development of agricultural markets.
- Separate constitution for special markets for commodities like onions, fruits, vegetables, and flowers.
- A separate chapter to regulate and promote contract-farming arrangements in the country.
- Prohibition of commission agency in any transaction of agricultural commodities with the producers.
- Market Committee to promote alternative marketing system, contract farming, direct marketing and farmers/consumers markets.
- State Marketing Boards to promote standardization, grading, quality certification, market led extension and training of farmers and market functionaries in marketing related areas.
- Constitution of State Marketing Standards Bureau for promotion of grading, standardisation and quality certification of agricultural produce.

IV. Outlook

8.53 Prospects of agricultural production in the current year 2004-05 are considered to be bright as a result of forecast of a favourable monsoon by the meteorological department. Agriculture accounts for 22 per cent of the GDP and provides livelihoods to 58 per cent of the country's population. Over the years, the agriculture sector has not received as much attention as other sectors in services and manufacturing. The emerging areas in agriculture like horticulture, floriculture, organic farming, genetic engineering, food processing, branding and packaging have high potentials of growth. Development of rural infrastructure, rural extension services, agro-based and food processing industries are essential for generating employment and reducing poverty.

8.54 Indian agriculture suffers from a mismatch between food crops and cash crops, low yields per hectare except for wheat, volatility in production and wide disparities of productivity over regions and crops. Domestic production of pulses and oilseeds are still below the domestic requirements and India imports pulses and edible oils to satisfy domestic demand. India is the second largest producer of rice and wheat in the world, first in pulses production and fourth in coarse grains. A distinct bias in agricultural price support policies in favour of rice and wheat has distorted cropping pattern and input usage. Market for farm output continues to be subject to heavy procurement interventions. A shift from minimum support price system and developing alternative product markets are essential for crop diversification and broad based agricultural development.

8.55 In recent years there has been considerable emphasis on the development of horticulture and floriculture through the creation of critical infrastructure for cold storage, refrigerated transportation, processing, packaging and quality control. India is the largest producer of coconut, cashew nuts, ginger, turmeric, and black pepper, and the second largest producer of groundnut, fruits and vegetables. India accounts for 10 per cent of the world fruit

production with first rank in the production of banana, sapota and acid lime. India is also the largest producer of milk, the fifth largest producer of egg and the seventh largest producer of meat. It is necessary to improve cold storage and transportation facilities and develop efficient marketing and export networks to optimise the production and export potentialities in respect of these products.

8.56 Food management is inefficient with unsustainable level of food subsidies imposing heavy burden on Government finance. The rural economy and the private sector lack the basic infrastructure to build up sufficient buffer stocks, and the country remains vulnerable to

weather shocks. In recent years, the Central Government has provided various fiscal incentives for improving rural storage facilities. The Central Government is also providing financial assistance to the State Governments for procurement and distribution of food grains at subsidized rates, particularly to the families below the poverty line.

8.57 The enhanced availability of bank credits through priority lending to agriculture and agro-based industries, favorable terms of trade, liberalized domestic and external trade for agricultural products attracted private investment in agriculture in recent years. It is likely that with the appropriate policy initiatives, this process will accelerate in the future.