

CROPS

Agriculture, especially crop production is the mainstay of the Indian economy, which supports about 115.5 million farm families. A variety of crops is grown under diverse climatic situations in different cropping systems. Rice-wheat is the main cropping system of Indo-Gangetic Plains in North-West and North-East India. Rice is the prevalent crop in the coastal belt of the eastern and southern states. A cotton-based cropping system is predominant in the rain-fed conditions of central, southern and western India and the irrigated areas of the northern and western region. Sugarcane is predominantly grown in Uttar Pradesh, Maharashtra, Tamil Nadu and Karnataka.

5.2 The distribution of farm holdings is dominated by small and marginal farmers. Rain-fed agriculture constitutes about 60 per cent of the net sown area of India. These areas are the major domain of oilseeds, pulses and coarse cereals production. The intensity and distribution of rainfall determine the crop prospects in a majority of the areas. The performance of the south-west monsoon on an all-India basis has been satisfactory with some inter-state/region aberrations. The seasonal rainfall during June to 30 September 2006 was 99 per cent of its Long Period Average (LPA). Excess or normal rainfall was received in 32 out of 36 meteorological sub-divisions. Heavy rains during August–September 2006 in the states of Gujarat, Rajasthan, Maharashtra, Andhra Pradesh and Madhya Pradesh led to inundation/flooding in several parts of these states, affecting a sizeable area of crops.

5.3 Late monsoon rains during September 2006 in several states have not only brightened the production prospects of Kharif crops but also triggered the early sowing of crops on residual moisture during Rabi, especially wheat in Madhya Pradesh, Maharashtra and Rajasthan. Rains during the second week of February 2007 have further brightened the production prospects of Rabi crops, particularly wheat.

5.4 The production of Kharif food grains during 2006-07 is estimated at 209.17 million tonnes (second advance estimates) which is higher than 208.59 million tonnes estimated during 2005-06. The production of rice is estimated at 90.13 million tonnes compared to 91.79 million tonnes during the previous year. The production of wheat is estimated at 72.50 million tonnes which is higher than the previous year's production of 69.35 million tonnes. The production of coarse cereals is estimated at 32.02 million tonnes, which is lower than the previous year's production of 34.06 million tonnes.

5.5 Sugarcane production is estimated to be higher at 315.53 million tonnes (first advance estimates), as against 281.17 million tonnes during the previous year. Cotton production is estimated at 209.64 lakh bales during 2006-07, against 189.99 lakh bales during 2005-06. The production of jute and mesta during the year 2006-07 is estimated at 113.90 lakh bales of 180 kg each as against 108.40 lakh bales of 180 kg each during 2005-06.

5.6 The national target for food grain production has been fixed at 220.00 million tonnes for the year 2006-07. The crop-wise break up of the targets of production is as under:

(Million Tonnes)

Crop	Kharif	Rabi	Total
1. Rice	80.78	12.02	92.80
2. Wheat	-	75.53	75.53
3. Jowar	4.28	3.33	7.61
4. Bajra	8.55	-	8.55
5. Maize	12.54	2.85	15.39
6. Ragi	2.79	-	2.79
7. Barley	-	1.65	1.65
8. Small Millets	0.53	-	0.53
9. Total Coarse Cereals	28.69	7.83	36.52
10. Total Pulses	5.78	9.37	15.15
Total Food Grains	115.25	104.75	220.00
11. Cotton*	185.00	-	185.00
12. Jute**	101.20	-	101.20
13. Mesta**	11.60	-	11.60
14. Sugarcane (Cane)	-	-	270.00

* Lakh bales of 170 kg each.

** Lakh bales of 180 kg each.

5.7 **Programmes in North-Eastern States:** The information with regard to programmes being implemented in the North-Eastern states is given in **Annexure – 5.1**.

5.8 **Oilseeds, Pulses, Oil Palm and Maize:** During the Tenth Plan, the Department of Agriculture and Cooperation restructured the development programmes of oilseeds, pulses, oil palm and maize into a centrally-sponsored integrated scheme of oilseeds, pulses, oil palm and maize, which is being implemented in 14 major states for oilseeds and pulses; 15 states for maize; and 10 states for oil palm. Further, a central sector scheme of integrated development of tree-borne oilseeds is being implemented through the National Oilseeds and Vegetable Oils Development (NOVOD) Board.

5.9 **Integrated Scheme of Oilseeds, Pulses, Oil Palm and Maize:** The scheme provides flexibility to the states in implementation based on a regionally differentiated approach, to promote crop diversification and to provide focused approach to the programmes. Under the scheme, assistance is provided for the purchase of breeder seeds, production of foundation seeds production and distribution of certified seeds, distribution of seed mini kits, distribution of plant protection equipments, weedicides, supply of rhizobium culture/phosphate solubilising bacteria, distribution of gypsum/pyrite/liming/ dolomite, distribution of sprinkler sets and water-carrying pipes, publicity, etc., to encourage farmers to grow pulses on a large scale.

The number of seed mini kits supplied to the states are indicated below:

Number of Mini Kits allocated to States during 2006-07

	Oilseeds	Pulses	Total
Kharif 2006	4,23,650	3,08,334	7,31,984
Rabi 2006-07	9,33,010	4,39,660	13,72,670
Total	13,56,660	7,47,994	21,04,654

5.10 In order to disseminate information on improved production technologies among the farmers, block demonstrations and Integrated Pest Management (IPM) demonstrations are organised through the State Department of Agriculture and frontline demonstrations through the ICAR. The details of area coverage, production and yield of oilseeds and pulses during 2005-06 and 2006-07 are given as under:

Oilseed

(Area: million ha; Prodn: million tonnes; Yield: kg/ha)

Year	Kharif			Rabi			Total		
	Area	Prodn	Yield	Area	Prodn	Yield	Area	Prodn	Yield
2005-06*	17.53	16.84	961	10.21	10.89	1067	27.74	27.73	1000
2006-07**		13.23							

* Fourth advance estimates as on 15 July 2006.

** First advance estimates as on 15 September 2006.

Pulses

(Area: million ha; Prodn; million tonnes; Yield: kg/ha)

Year	Kharif			Rabi			Total		
	Area	Prodn	Yield	Area	Prodn	Yield	Area	Prodn	Yield
2005-06*	10.63	4.66	439	11.80	8.45	716	22.43	13.11	585
2006-07**		4.97							

* Advance estimates as on 6 July 2005.

** Advance estimates as on 22 February 2006.

5.11 **Oil Palm:** The oil palm development programme under ISOPOM has been approved to achieve an area expansion of 50,000 hectare, with an allocation of Rs 50.00 crore during the Tenth Plan. The programme is being implemented in the states of Andhra Pradesh, Karnataka, Tamil Nadu, Gujarat, Goa, Orissa, Kerala, Tripura, Assam and Mizoram.

5.12 With a view to exploiting the huge potential of oil palm in India, an expert committee was constituted in November 2005. In its report, the committee has identified 10.36 lakh hectares as the potential area for oil-palm plantation and has recommended that 2.24 lakh hectares be brought under its cultivation in the Eleventh Five-Year Plan, with a total investment of Rs 1175.00 crore. The year-wise target and achievement for

the period 2005-06 and 2006-07 in respect of area coverage under oil palm through implementation of the Oil- palm Development Programme is as follows:

(Area in ha)

Year	Target	Achievement
2005-06	11,000	12665
2006-07	12,000	13818*

*Up to November 2006.

5.13 **Maize:** Maize is cultivated over an area of 77.27 lakh hectares with a grain production of 150.91 lakh tonnes (2005-06) annually in India. About 90 per cent of cultivated maize is Kharif rain-fed. Maize is cultivated mainly for food, fodder, feed and industrial use. More than 3500 value-added products of daily application are derived from maize. Under ISOPOM, maize development programmes are under implementation in 15 States viz. Andhra Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal. The major achievements in area, production and productivity of maize for the period 2005-06 and 2006-07 are given as under:

Year	Area (lakh ha)	Production (lakh tonnes)		Productivity (kg/ha)
		Targets	Achievements	
2005-06*	77.27	141.00	150.91*	1953
2006-07	68.35	146.50	114.33**	1667

* Fourth advance estimate.

** First advance estimates (Kharif only).

5.14 **Programmes on North-Eastern States:** Under ISOPOM, only oil-palm development programmes are being implemented in the states of Assam and Tripura. Since other North-Eastern states are not major producers of oilseeds, pulses and maize, they are not covered under ISOPOM. However, such states are permitted to undertake oilseeds, pulses and maize production programmes under the Macro Management Scheme.

5.15 **Integrated Development of Tree-borne Oilseeds by NOVOD:** A statutory and autonomous body under the Department of Agriculture and Cooperation, NOVOD has been assigned the task to promote the cultivation of tree-borne oilseeds including jatropha and karanja. A central sector scheme, the 'Integrated Development of Tree-borne Oilseeds', during the Tenth Plan, is under implementation through the NOVOD Board to promote their cultivation. The Board has undertaken the following promotional activities:

- Development of elite planting material and model plantation in 10,000 hectares in 21 States.
- Research and development programmes through the national network of 43 institutions of Indian Council of Agricultural Research (ICAR), Council of Scientific and Industrial Research (CSIR), Indian Council of Forestry Research

and Education (ICFRE) and State Agriculture Universities (SAUs) etc., in 23 states.

- Transfer of technology by imparting training to the trainers and farmers on tree-borne oilseeds including jatropha and karanja for bio-diesel production.
- Establishment of tree-borne oilseed gardens to demonstrate improved practices and IPM on tree-borne oilseeds.
- Back-ended Credit-linked Subsidy Programme (30 per cent subsidy, 50 per cent bank loan, 20 per cent beneficiary share) for commercial cultivation of jatropha and karanj, oil extraction and creation of pre-processing facilities for bio-diesel production.

5.16 Strategic Vision for Sustainable Growth in Agriculture: Although Indian Agriculture has come a long way, there are certain implications that have to be addressed for national and nutritional security. Our population is expected to be 1.4 billion by 2020. The increasing population, coupled with growing income will generate increased demand for food grains and non-food grain crops. Therefore, Indian agriculture has to achieve a higher growth rate targeted at 4 per cent per annum on a sustainable basis. Indian agriculture also has to diversify into high-value crops, raise productivity, restore soil health and enhance the application of modern technologies including biotechnology. The Department of Agriculture and Cooperation is working on strategies to achieve 4 per cent annual growth rate. These include focus on potential areas, regionally-differentiated strategies, crop diversification and the scientific management of natural resources.