

CHAPTER 2

AGRICULTURAL PRODUCTION

The agricultural sector showed a strong revival in 1983-84. *Kharif* foodgrains, according to preliminary estimates, will set a new record of around 34 million tonnes, showing an increase of 21 per cent over the 1982-83 *kharif* output of 69.5 million tonnes. The outlook for *rabi* foodgrains production is quite encouraging and if weather and rainfall conditions in the coming months are normal, production may exceed last year's record level of 58.9 million tonnes. Foodgrains production in 1983-84 is likely to reach a record level of 142—144 million tonnes, marking a

very substantial increase over the previous peak of 133.3 million tonnes in 1981-82. Oilseeds production will also exceed the previous peak. On the whole, agricultural production may show a growth of about 9 per cent in 1983-84.

Performance in 1982-83

2.2 Agricultural production in 1982-83 suffered from highly unfavourable weather conditions. The south-west monsoon set in late, behaved erratically

TABLE 2.1

Agricultural Production

Crop	(Million Tonnes/bales*)									
	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83
Rice	44.05	39.58	48.74	41.92	52.67	53.77	42.33	53.63	53.25	46.48
Wheat	21.78	24.10	28.85	29.01	31.75	35.51	31.83	36.31	37.45	42.50
Pulses	10.01	10.01	13.04	11.36	11.97	12.18	8.57	10.63	11.51	11.57
Kharif foodgrains	67.84	59.10	73.89	66.53	77.72	78.08	63.25	77.65	79.38	69.49
Rabi foodgrains	36.83	40.73	47.15	44.64	48.69	53.82	46.45	51.94	53.92	58.86
All foodgrains	104.67	99.83	121.03	111.17	126.41	131.90	109.70	129.59	133.29	128.35
Groundnut	5.93	5.11	6.75	5.26	6.09	6.21	5.77	5.01	7.22	5.55
Rapeseed and Mustard	1.70	2.25	1.94	1.55	1.65	1.86	1.43	2.30	2.38	2.47
Oilseeds@	9.39	9.15	10.61	8.43	9.66	10.10	8.74	9.37	12.19	10.55
Sugarcane (Cane)	140.81	144.29	140.60	153.01	176.97	151.66	128.83	154.25	186.36	189.13
Cotton (Lint)*	6.31	7.16	5.95	5.84	7.24	7.96	7.65	7.01	7.88	7.72
Jute and Mesta*	7.68	5.83	5.91	7.10	7.15	8.33	7.96	8.16	8.37	7.17

*170 Kgs each for cotton and 180 kgs each for jute and mesta.

@Nine major oilseeds including groundnut, castorseed, sesamum, rapeseed and mustard, linseed, sunflower, nigerseed, safflower and soyabean.

and then withdrew early. Out of the 35 meteorological sub-divisions of the country, 11 reported deficient precipitation and none experienced rainfall in excess of 'normal'. Failure of the late-September/early-October (*hathia*) rains in 1982 compounded the problems faced by the *kharif* crops over vast areas, particularly in Orissa, West Bengal, Bihar, Eastern Uttar Pradesh and parts of Gujarat, Tamil Nadu and Andhra Pradesh. Floods, especially in parts of Orissa, Bihar and Eastern Uttar Pradesh, and cyclonic storms in Saurashtra in early November, 1982 also caused widespread damage to the standing crops. *Kharif* foodgrains production declined from 79.4 million tonnes in 1981-82 to 69.5 million tonnes in 1982-83. Production of *kharif* rice declined by 6.5 million tonnes, of coarse cereals by 2.9 million tonnes and of *kharif* pulses by 0.4 million tonnes. The shortfall in *kharif* foodgrains production would have been larger but for the prompt steps taken to compensate for the adverse impact of monsoon through a production drive focusing on intensive utilisation of minor irrigation potential by providing diesel oil and electric power for the agricultural sector on a priority basis, and special efforts to ensure timely supply of seeds for resowings, fertilisers, pesticides, etc., with the necessary credit back-up.

2.3 Non-food crops also suffered during the *kharif* season of 1982-83. *Kharif* production of groundnut declined by 31 per cent from 5.5 million tonnes to 3.8 million tonnes, of sesamum by 14.9 per cent, and of nigerseed by 26.3 per cent. Production of jute and mesta declined by 14.3 per cent, from 8.4 million bales to 7.2 million bales. Cotton, which is another major *kharif* cash crop, experienced only a marginal decline from 7.9 million bales in 1981-82 to 7.7 million bales in 1982-83. Sugarcane production increased by 1.5 per cent at 189.1 million tonnes over the previous year's record production of 186.4 million tonnes.

2.4 Part of the loss experienced in *kharif* production was made up by the improved performance in the *rabi* season. Although the *hathia* rains had failed, subsequent rains (except in Uttar Pradesh) provided some welcome moisture for sowing in the *rabi* regions. Winter rains (January—February, 1983) were above normal in Punjab and Haryana and normal in Himachal Pradesh and East Rajasthan. The entire northern belt consisting of Jammu and Kashmir, Himachal Pradesh, Punjab, Haryana, Rajasthan and Uttar Pradesh (except East Uttar Pradesh), received excess rainfall during the last week of February, 1983 to the benefit of standing *rabi* crops.

2.5 At the same time, intensive efforts were mounted for raising foodgrains production in order to make up, to the extent possible, the *kharif* losses. All the agencies at the village level and upwards were mobilised and Central teams were sent to major *rabi*-growing States to help ensure adequate and timely supplies of inputs including seeds, fertilisers, weedicides and pesticides, technology and credit at farm level. Greater utilisation of irrigation facilities was achieved

through the release of maximum feasible water into the canals, and adequate supplies of diesel oil and electricity for operating pump sets and tubewells. Special efforts were also made to improve distribution of inputs. Fertiliser consumption in the 1982-83 *rabi* season went up to 41.21 lakh tonnes (of NPK), an increase of 10 per cent over the level of 37.54 lakh tonnes in the *rabi* season of the previous year. Distribution of improved/certified seeds of wheat, *rabi* pulses and oilseeds at 1.5 million quintals was 35 per cent higher than in the previous *rabi* season. High-yielding varieties of seeds covered wheat area of 18.1 million hectares in 1982-83, compared with 16.7 million hectares in the previous *rabi* season. These efforts had the desired impact and foodgrains production in the *rabi* season increased by 5.0 million tonnes to a record level of 58.9 million tonnes from 53.9 million tonnes in 1981-82. This increase offset half of the shortfall suffered in the preceding *kharif* season. Overall, foodgrains production during 1982-83 declined by 4.9 million tonnes, from 133.3 million tonnes in 1981-82 to 128.4 million tonnes. This compares with the total loss of more than 22 million tonnes of foodgrains suffered in a lesser drought year of 1979-80 from 131.9 million tonnes in 1978-79 to 109.7 million tonnes in 1979-80. This is an unmistakable evidence of the steadily growing strength and resilience of Indian agriculture.

2.6 Production of wheat touched an all-time high of 42.5 million tonnes in 1982-83 representing an increase of about 13.5 per cent over 1981-82. It is notable that wheat production has moved up to new record levels in three successive years, touching 36.3 million tonnes in 1980-81, 37.5 million tonnes in 1981-82 and 42.5 million tonnes in 1982-83. In the case of oilseeds, too, part of the loss suffered in the *kharif* oilseed crops was made up during the *rabi* season. Production of rape and mustard seeds increased by 3.8 per cent and of *rabi* groundnuts by 2.3 per cent. However, total production of oilseeds in 1982-83 declined compared with the previous year. In the case of pulses, the loss during the *kharif* was made up during the *rabi* season, and total pulses production in 1982-83 registered a marginal increase over the previous year.

Performance in 1983-84

2.7 The south-west monsoon, which generally sets in by the first week of June, was delayed in 1983 by 10—15 days. Subsequently, for over two weeks, the monsoon weakened, causing apprehension of withering of seedlings in the rain-fed areas of West Bengal Bihar, Uttar Pradesh, Haryana, Rajasthan, Madhya Pradesh, Maharashtra and Gujarat. Except for the irrigated areas, transplanting paddy fell behind schedule in many of these States. However, the monsoon revived in some parts of the country in July and over most parts of the country in August. Rainfall was widespread in August and September, 1983. This proved beneficial for sowing/transplanting and for the subsequent growth of *kharif* crops. The cumulative rainfall during the four months (June to September, 1983) was normal or in excess of normal in

as many as 32 out of 35 meteorological sub-divisions. By 30th September, 1983 only 15 per cent of the districts in the country had experienced deficient cumulative rainfall, as against 52 per cent in 1982 and 31 per cent in 1981. Although floods were reported in some regions, the damage to the crops was largely localised. Good *hathia* rains towards the end of September and early October proved very beneficial to the standing *kharif* crops, and also contributed significantly to the sub-soil moisture as well as to the replenishment of water tanks and reservoirs to the benefit of the subsequent *rabi* operations.

2.8 Significant initiatives were taken by the Government to increase agricultural production. Intensive campaigns were launched during the *kharif* and *rabi* seasons to provide critical agricultural inputs to the farmers on time and in adequate quantities. In order to encourage the application of fertilisers on a larger scale the Government announced a reduction of 7.5 per cent in the prices of fertilisers with effect from 29th June, 1983. A further discount of 10 per cent was given on about a million tonnes of old stocks (of standard specifications) of fertilisers lying with the Food Corporation of India. The highlights of the *kharif* action plan were : extension of area under high-yielding varieties, establishment of community nurseries particularly for paddy cultivation, supply of mini-kits of quality seeds, scientific water management for yield maximisation from irrigated areas, adoption of a remunerative price policy for farmers, extension of credit particularly to small and marginal farmers and appropriate and timely plant protection measures.

2.9 According to preliminary assessments, *kharif* foodgrains production during 1983-84 is likely to be around 84 million tonnes as against the target of 83 million tonnes, with a breakthrough in rice. Production of *kharif* oilseeds, led by groundnuts, is expected to increase significantly. It is expected that the overall foodgrains production during 1983-84 might be of the order of 143 million tonnes i.e. about 15 million tonnes higher than the last year's crop of 128.4 million tonnes. For the first time this year, rice production is expected to break the barrier of 53-54 million tonnes by a margin of around 3 million tonnes. Total oilseeds production is similarly expected to reach a new peak of 12.5 million tonnes.

Inputs

Seeds :

2.10 Production-cum-distribution of quality seeds of the right variety has been accorded a high priority under the Sixth Plan. Breeder seeds used to be produced initially only by the agricultural universities and the ICAR institutions. From 1982-83 farms of the National Seeds Corporation and of the State Farms Corporation of India are also being utilised for the production of breeder seeds, in addition to agricultural universities and the ICAR institutions. As a result, the production of breeder seeds during 1982-83 increased to 17,067 quintals as against 3,915

quintals in 1981-82. Cropwise details of breeder seed production are given below :

TABLE 2.2
Production of Breeder Seeds
(Quintals)

Crop	1981-82	1982-83
Cereals	1,944	11,067
Pulses	574	2,886
Oilseeds	1,373	2,652
Fibres etc.	24	462
TOTAL	3,915	17,067

2.11 The distribution of quality seeds has also been stepped up substantially. It increased by 41 per cent from 29.81 lakh quintals in 1981-82 to 42.06 lakh quintals in 1982-83 and further by 36 per cent to 57 lakh quintals in 1983-84. An innovative programme of distribution of minikits of improved varieties of seeds has been introduced under different Central and Centrally-sponsored programmes. The objective is to popularise improved varieties of seeds of pulses, oilseeds and cereals. The minikits are distributed free to demonstrate the potential productivity of the new technology on a limited area. During 1983-84, 42.32 lakh minikits were distributed including 11.83 lakh minikits of pulses and 14.92 lakh minikits of oilseeds. A major proportion of these minikits was distributed among the small and marginal farmers.

2.12 The area under High-Yielding Varieties Programme for cereal crops increased from 46.5 million hectares in 1981-82 to around 48 million hectares in 1982-83. The target for coverage of area under this programme has been fixed at 52 million hectares for 1983-84. On the basis of the 1983-84 target it is estimated that about 80 per cent of the total area under wheat will be covered by HYV Programme. The coverage in respect of paddy will be only about 56 per cent; in the case of coarse cereals it will be much less. The execution of the High-Yielding Varieties programme needs to be accelerated particularly in the case of paddy which is normally grown only in areas with assured rainfall or where irrigation facilities are available.

Fertilisers :

2.13 An important development during 1983-84 was a substantial reduction in the prices of fertilisers. As a result of the reduction of 7.5 per cent with effect from 29th June, 1983, the price of urea was reduced by Rs. 200 per tonne and that of DAP by Rs. 250 per tonne. Besides, about a million tonnes of old stocks (of standard specifications) of fertilisers lying with the FCI were given a further discount of 10 per cent. The distribution net-work was also expanded by opening over 20,000 additional outlets for fertiliser distribution in a single year. As a result, the consumption of chemical fertilisers (NPK) during the *kharif* season is expected to have increased by 22 per cent to 34.15 lakh tonnes. Consumption

during the *rabi* season when full impact of price reduction will be felt, will also show a substantial increase, particularly because weather conditions were considered 'favourable' for *rabi*-sowings. The overall fertiliser consumption during 1983-84 is likely to go well above the Plan target of 72 lakh tonnes.

2.14 Consumption of fertilisers has maintained an upward trend over the years. Fertiliser consumption increased from 6.1 million tonnes in 1981-82 to 6.4 million tonnes in 1982-83, the entire increase being accounted for in the *rabi* season.

TABLE 2.3
Consumption of Fertilisers

	(Lakh tonnes of NPK)		
	Kharif	Rabi	Total
1981-82	23.10	37.54	60.64
1982-83	22.67 (Feb.-July) (-1.9) 28.05 (Apr.-Sep.)	41.21 (+9.8)	63.88 (+5.3)
1983-84 (Estimated)	34.15 (Apr.-Sep.) (+22)		

(Figures in brackets show percentage variation over the previous year. From *kharif*, 1983 the period of coverage for *Kharif* was changed to April-September from earlier accounting period of February-July).

Fertiliser consumption declined in the 1982 *kharif* season because of unfavourable weather conditions, but the loss was more than made-up in the 1982-83 *rabi* season. In spite of the intensity of the drought in 1982, the rate of growth of fertiliser consumption in 1982-83 was 5.3 per cent which is higher than the 2.7 per cent growth in the previous drought year 1979-80. Around 21,700 additional retail fertiliser sale points were opened during 1982-83 in order to improve the availability of fertilisers in the far flung areas. Also, intensive fertiliser promotion campaigns were launched in 104 districts having good irrigation facilities/sufficient rain, but with low rates of fertiliser consumption. The volume of short-term loans advanced to the State Governments for purchase and distribution of fertilisers along with other inputs increased from Rs. 200 crores in 1981-82 to Rs. 260 crores in 1983-84, an increase of 30 per cent. The National Bank for Agricultural and Rural Development (NABARD) raised the credit limits for crop loans to the cooperative banks to Rs. 1120 crores in 1982-83, compared with Rs. 892 crores in the preceding year. The utilisation of the limit was also higher at 76.6 per cent during 1982-83, compared with 74.1 per cent in 1981-82. Manufacturers intensified their own extension and promotion efforts in 'adopted' villages and districts and even supplied free fertiliser kits to many small and marginal farmers. The scheme of transport subsidy was continued so as to encourage distribution of fertilisers over wider areas.

2.15 There are wide variations in the use of fertilisers over regions, seasons and crops. The regional variations range from one Kg. per hectare of gross

cropped area in Nagaland to 134 Kgs. in Punjab and 255.8 Kgs. per hectare in Pondicherry, as against an all-India average of 36.5 Kgs. per hectare during 1982-83. Besides, around two-thirds of the total consumption are applied to the *rabi* crops, which account for only one-third of the total cropped area. Similarly, some crops attract somewhat liberal doses of fertilisers, to the comparative neglect of other crops. Per hectare consumption of fertilisers in paddy is fairly high in Punjab, Tamil Nadu, Haryana, Andhra Pradesh and Karnataka. However, some of the States with considerable area under paddy show very low use of fertilisers. These include Uttar Pradesh, Bihar, Madhya Pradesh, Orissa and West Bengal. In the case of wheat, use of fertilisers is quite intensive in Punjab and Haryana. Sugarcane attracts the highest rate of per hectare fertiliser consumption, particularly in Maharashtra, Andhra Pradesh and Tamil Nadu. Hybrid cotton is another cash crop which attracts a comparatively high dose of fertilisers. The rates of consumption of fertilisers are very low in the case of coarse cereals, oilseeds and pulses.

Manures :

2.16 Organic manures play an important role in increasing productivity even in less favourable conditions, and help in improving the soil structure. Con-junctive use of chemical fertilisers and organic manures in an optimal manner would go a long way in improving soil fertility in the long run. It is estimated that at present there is a rural compost potential of 650 million tonnes, of which only about 225 million tonnes is actually utilised. This is equivalent to 3.37 million tonnes of nutrient in terms of NPK. Through urban composting schemes in about 3200 centres in the country, about 6.0 million tonnes of compost is being generated annually. More vigorous efforts in this direction can lead to fuller utilisation of the existing potential. The bio-gas programme can play an important role in the development of additional organic manurial resources for agricultural purposes. The twin benefits flowing from the use of bio-gas technology are : (i) conservation of cattle dung and agricultural residues for production of good quality manure and (ii) provision of cheaper fuel in the form of gas.

2.17 Recently, agricultural scientists in India have done significant pioneering work in the development of bio-fertilisers for leguminous as well as non-leguminous crops. This has opened the way for increase in crop yields through the use of cheap, non-polluting and renewable sources of plant nutrients. Currently, a national project on development and use of bio-fertilisers is being implemented by the Ministry of Agriculture. Through the implementation of this programme, it is envisaged to produce 375 tonnes of Rhizobium culture and 40 tonnes of blue green algal culture to cover 7.5 lakh hectares of leguminous crops and 40,000 hectares of low-land paddy annually.

Irrigation :

2.18 Irrigation is a key factor not only in raising agricultural production but also in minimising the instability attributable to uncertain and irregular rainfall. During 1982-83, 2.34 million hectares of additional

irrigation potential was created, as against 2.25 million hectares created during 1981-82. Of the total addition to irrigation potential in 1982-83, 0.90 million hectares was covered by major and medium irrigation projects and 1.44 million hectares by minor irrigation schemes. A cumulative potential of 63.32 million hectares was created by the end of June, 1983 com-

pared with 60.98 million hectares a year ago. The cumulative utilisation of the irrigation potential also improved from 92.1 per cent in 1981-82 to 92.5 per cent in 1982-83. In absolute terms, utilisation increased from 56.17 million hectares in 1981-82 to 58.55 million hectares in 1982-83. The target set for 1983-84 is 61.07 million hectares.

TABLE 2.4

Irrigation—Cumulative Potential and its Utilisation

(In million hectares)				
	Potential up to June 1982	Utilisation up to June 1982	Potential up to June 1983	Utilisation up to June 1983
Major & Medium Irrigation	28.208	23.401	29.110	24.332
(Additional)	(0.873)	(0.563)	(0.902)	(0.931)
Minor Irrigation	32.773	32.773	34.214	34.214
(Additional)	(1.373)	(1.373)	(1.441)	(1.441)
Total	60.981	56.174	63.324	58.546
(Additional)	(2.246)	(1.936)	(2.343)	(2.372)

2.19 With rising unit cost of adding to irrigation potential, it is essential that the existing potential is fully utilised. This underlines the importance of the Command Area Development (CAD) programme which has been taken up with a view to accelerating the pace of utilisation of existing irrigation potential. Development of the main drainage system, construction of field channels and drains, land shaping and levelling, adoption of appropriate cropping patterns and enforcement of a rostering system of water distribution among the beneficiary farmers are the important elements of the CAD programme. The goals set for 1982-83 for the construction of field channels and land levelling under the CAD programme seem to have been reached :

TABLE 2.5

C.A.D. Programme

	(Million hectares)	
	Target	Anticipated achievement
Construction of field channels	0.9	1.0
Land levelling	0.12	0.10

2.20 The CAD Programme is being continued in the 76 ongoing projects. Some new projects are also proposed to be taken up during 1983-84 in order to reduce the gap between the irrigation potential and its utilisation. The outlay provided for the programme during 1983-84 is Rs. 186.64 crores of which Rs. 46.95 crores is in the Central sector. During the year, it is proposed to cover an area of 1.0 million hectares under field channels and 0.15 million hectares under the land levelling programme. In order to speed up the construction of field channels, the

Centre has recently made an additional allocation of Rs. 50 crores. Of this, Rs. 25 crores will be provided to the States on a matching basis and the balance of Rs. 25 crores will be given to the States as 100 per cent grant for exceeding the 1983-84 targets for the construction of field channels. Similar incentive schemes may also be worked out for other components of the C.A.D. programme.

2.21 The additional irrigation potential created and utilised during the Sixth Five Year Plan period is shown in the following table :

TABLE 2.6

Irrigation—Additional Potential and Utilisation

	('000 Hectares)		
	Major & Medium Schemes	Minor Schemes	Total
A.—Potential Created			
1980-81	835	1,400	2,235
1981-82	873	1,373	2,246
1982-83	902	1,441	2,343
1983-84 (Target)	939	1,431	2,370
Total for 4 years	3,549	5,645	9,194
B.—Utilisation			
1980-81	517	1,400	1,917
1981-82	563	1,373	1,936
1982-83	931	1,441	2,372
1983-84 (Target)	1,097	1,431	2,528
Total for 4 years	3,108	5,645	8,753

2.22 When the Sixth Plan commenced, 172 major projects and over 450 medium projects were under construction. Some provision was also made in the Sixth Plan for a few new starts. It was envisaged that 65 major projects which had been in progress as on 1 April, 1976 and were incomplete at the beginning of the Sixth Plan would be completed by the end of the Sixth Plan. According to the present assessment, however, only 38 out of these 65 projects may be completed by the end of the Sixth Plan period and the other 27 will spill over into the Seventh Plan. Efforts are, therefore, necessary to increase the tempo of completion of projects and to provide the funds necessary for the completion of as many of the ongoing projects as possible. Special efforts are required to be directed to the long drawn out schemes like Nagarjunasagar, Rajasthan Canal Stage II, Gandak, Kosi, Malaprabha, Kallada, etc. The monitoring of ongoing projects at the Centre should be aimed at ensuring these objectives.

2.23 Upkeep and maintenance of the irrigation system is another important aspect closely bearing on the utilisation of existing irrigation potential. Afforestation, periodic desiltation and other works should be regularly undertaken to ensure optimum lifespan of the major and medium irrigation works.

Credit :

2.24 The Government of India has adopted multi-agency approach in order to increase the flow of institutional credit to agriculture and allied sectors and also to minimise the dependence of the rural poor on non-institutional sources of credit. The share of institutional agencies in agricultural credit has been steadily increasing over the years. Only 7 per cent of the total credit requirements of agricultural sector were met by institutional agencies in 1951-52. This rose to 19 per cent in 1961-62 and further to 29 per cent in 1971-72. According to latest estimates, about 40 per cent of the credit requirements of the agricultural sector are being met by institutional agencies like cooperatives, commercial banks and regional rural banks.

2.25 Cooperative credit institutions have a major share in the institutional credit to the agricultural and allied sectors. The institutional agencies, taken together, have been given a target of reaching the level of Rs. 5,415 crores of credit disbursal during the terminal year of the Sixth Plan (1984-85). Of this, the share of cooperatives would be Rs. 2,500 crores as short term loans and Rs. 795 crores as medium and long term loans, and the balance is to be provided by commercial banks and regional rural banks. The share of the weaker sections in the institutional credit to agriculture is expected to reach the level of 50 per cent by the end of the Sixth Five Year Plan. The amount of loans disbursed by cooperatives increased from 2,109 crores in 1980-81 to Rs. 2,310 crores in 1981-82, and further to Rs. 2,347 crores in 1982-83. The target for 1983-84 is Rs. 2,882 crores.

2.26 The share of commercial banks in agricultural credit has considerably increased since their nationalisation in 1969, and the banks have opened a large number of branches in the rural and semi-urban areas to cater mainly to agriculture and allied sectors. The total number of commercial bank branches at the end of June 1983 was 42,027, of which 53.8 per cent i.e. 22,629 were located in the rural areas. Direct finance to the agricultural sector by public sector banks increased from Rs. 2,229 crores at the end of June 1980 to Rs. 2,955 crores at the end of June 1981, and further to Rs. 3,447 crores at the end of June 1982. Direct advances of these banks to agriculture which accounted for 12.7 per cent of their aggregate advances at the end of June 1982, went up to around 13.2 per cent by the end of September 1983. It is planned to raise this percentage further to 15 per cent by the end of the Sixth Plan. At the time of nationalisation this proportion was a mere 1.3 per cent.

2.27 Since 1975 a new category of banking institutions has been brought into existence in the form of Regional Rural Banks, designed for greater local involvement of banks in meeting the credit requirements of weaker sectors, small and marginal farmers, landless labourers, artisans and small entrepreneurs. At the end of March 1983, 141 such banks were working in the country, and the number increased to 148 by November 1983. At the end of March 1983, the Regional Rural Banks had opened 6458 branches, mobilised deposits of Rs. 502 crores and had outstanding advances amounting to nearly Rs. 603 crores.

2.28 An important step towards streamlining the rural credit machinery was taken with the establishment, in July 1982, of the National Bank for Agricultural and Rural Development (NABARD). Prior to the establishment of NABARD, refinance to State Land Development Banks (SLDBs), State Cooperative Banks (SCBs), Commercial Banks (CBs) and Regional Rural Banks (RRBs) for investment credit for agriculture and allied activities was provided by the Agricultural Refinance and Development Corporation (ARDC). During 1982-83 the NABARD sanctioned long-term refinance of Rs. 1019 crores, compared with Rs. 895 crores in the previous year sanctioned by the ARDC. Purpose-wise, the commitments under minor irrigation schemes were the largest (Rs. 357 crores), followed by IRDP (Rs. 196 crores), farm mechanisation (Rs. 187 crores), and plantation/horticulture (Rs. 72 crores). Actual disbursement of refinancing facilities under scheme-oriented lending increased from Rs. 600 crores in 1981-82 to Rs. 703 crores in 1982-83. Total amount outstanding under this head at the end of June, 1983 was Rs. 3,492 crores. Similarly, refinance for production loans and medium term loans to SCBs and the general line of credit to RRBs was provided by RBI before this function was taken over by NABARD. During 1982-83, 20 SCBs were sanctioned credit limits for seasonal agricultural operations aggregating Rs. 1,120 crores on behalf of 275 Central Cooperative Banks (CCBs). The credit limit sanctioned during the year represented an increase of 25.6 per cent over the limits of Rs. 892 crores sanctioned to 20 SCBs during the previous year.

2.29 Overdues and defaults in the repayment of agricultural loans have been a cause of serious concern. The position of overdues in cooperatives and commercial banks over the three years ended 1981-82 is given below :

TABLE 2.7

Overdues of Agricultural Loans

	(Percentage of overdues to demand)		
	1979-80	1980-81	1981-82
(a) Cooperative Institutions			
(i) Primary Agricultural Credit Societies	46.3	41.4	43.0
(ii) Central Cooperative Banks	42.2	37.0	35.3
(iii) Primary Land Development Banks	52.0	51.0* 40.0**	41.0**
(b) Commercial Banks (As on June-end)	47.9	47.1	N.A.

*Before rephasing/blocking.

**After postponement/blocking.

N.A. Not Available.

Increase in the overdues affects the cooperatives in many ways, mainly by eroding their capacity to expand loaning in the succeeding years. Also, once an institutional agency is not able to revolve funds, it becomes ineligible to raise additional resources and its programmes receive serious set-back, affecting its viability. Strict discipline has, therefore, to be enforced in respect of loans advanced by cooperative institutions and primary land development banks. On their part, the refinancing agencies have been trying to enforce discipline by urging the credit institutions to improve their overdues position. Care has, however, to be taken to protect the interests of the new and non-defaulting borrowers, and also the small/marginal borrowers defaulting for reasons beyond their control.

Cereals, Pulses and Oilseeds*Cereals :*

2.30 Cereals, pulses and edible oils constitute the major items of food in the country. Amongst cereals, wheat production has shown a striking dynamism and has been the principal source of the Green Revolution in the country. However, there have been wide regional variations in the productivity levels of wheat; while Punjab and Haryana have achieved high levels of productivity, other States, particularly Madhya Pradesh, Bihar, Uttar Pradesh and Rajasthan are lagging behind. Effective steps need to be taken to ensure that the low productivity States come out of their stagnation. In the case of rice, there has been some increase in production but the productivity at the national level is comparatively low. The major contribution to the increase in rice production during the last few years has come from the non-traditional rice growing States of Punjab, Haryana, Western U.P.,

and some parts of Rajasthan. The increases in the traditional rice growing States have not been encouraging.

TABLE 2.8

Statewise Yields of Rice and Wheat (1982-83)

State	(Kgs. per hectare)	
	Rice	Wheat
1. Andhra Pradesh	2,110	527
2. Assam	1,121	1,120
3. Bihar	681	1,342
4. Gujarat	1,027	2,091
5. Haryana	2,607	2,523
6. Himachal Pradesh	828	1,262
7. Jammu and Kashmir	2,094	1,018
8. Karnataka	1,916	603
9. Kerala	1,640	..
10. Madhya Pradesh	711	1,092
11. Maharashtra	1,311	785
12. Manipur	1,383	..
13. Meghalaya	1,140	..
14. Nagaland	977	..
15. Orissa	728	1,906
16. Punjab	3,144	3,007
17. Rajasthan	750	1,830
18. Sikkim	789	..
19. Tamil Nadu	1,859	..
20. Tripura	1,430	..
21. Uttar Pradesh	1,115	1,860
22. West Bengal	1,018	2,275
All India	1,230	1,836

Pulses :

2.31 The per hectare yield rates of pulses have remained almost at the same low levels as in the sixties. As a result, production has remained more or less stagnant while population and demand have expanded. The Sixth Plan contemplated special efforts for increasing the production of pulses. The main elements of the strategy were introduction of pulse crops in irrigated areas, bringing additional areas under short duration varieties of urad, moong, etc., inter-cropping of arhar with other crops, use of improved seeds, plant protection measures, etc. However, the increase aimed at has not materialised in the first three years of the Sixth Plan. Even the production level of 13 million tonnes reached in 1975-76 has not been achieved since then.

2.32 The main reason for the low productivity of pulses in India is the absence of improved technology and inputs comparable to those available for rice and wheat. Traditionally, cultivation of pulses is mostly undertaken on marginal lands under rainfed/dry land conditions with very low levels of inputs. Promotion of cultivation in the areas newly brought under irrigation has not been very successful so far. However, efforts in this direction must continue and promotion

of improved practices in the dry-land areas under pulses may yield substantial results.

Oilseeds :

2.33 Production of oilseeds has somewhat improved over the Sixth Plan period. However, the increase, coming after a long period of stagnation, has been inadequate. Development measures in the field of oilseeds include strengthening of research, extension and training, promotion of perennial crops like coconut and oil palm, collection and economic utilisation of oilseeds of tree origin, and provision of appropriate price support policy. Also, special schemes are being implemented for the promotion of summer groundnut and non-traditional oilseeds like soyabean and sunflower seed. These efforts have to be intensified and possibilities in regard to palm oil need to be explored. An important reason for low and fluctuating yields of oilseeds in the country is that they are largely grown without irrigation and proper application of fertilisers and other modern inputs, and with low level of management. As in the case of pulses, oilseeds, too, require major efforts in the dry-land areas.

Dry Farming

2.34 Dry-lands presently (1978-79) account for 73.5 per cent of the cultivated area—about 105 million hectares out of the net cultivated area of 142.9 million hectares. The National Commission on Agriculture had estimated that by the year 2,000 AD, out of a net cultivated area of 150 million hectares the net irrigated area was likely to be only 61 million hectares, so that 60 per cent of the area would continue to be rainfed. Dry-land areas are characterised by low and uncertain rainfall, high annual evaporation and the high summer temperatures. Dry-land soil is generally deficient in nitrogen and some other important plant nutrients. Further, the problem of soil erosion is very severe in dry-lands. These characteristics, combined with poor management skills and low resource inputs, lead to low productivity, wide yield fluctuations and frequent crop failures. It will be wrong, however, to assume that dry-land agriculture has no future. Even non-monetary/low-cost package of inputs like use of seeds of short-duration and high-yielding crop varieties, timeliness of tillage and soil preparation operations, optimum plant population, and weeding could increase the yields up to 50 per cent in dry-land areas. Inter-cropping can bring about major production advances in the rain-fed areas, and, at the same time, reduce the element of risk associated with dry-land farming.

2.35 The Government of India had launched a Centrally-sponsored Scheme on Integrated Dry-land Agricultural Development in 1970-71 under which 24 projects were set up in 20 States with the object of testing and demonstrating the available dry-land technology on farmers' fields. The scheme was transferred to the States in 1979-80. Considerable field work has been done already under these projects, and it has been possible to evolve region-wise optimum

approaches to erosion control, conservation of moisture, fertiliser use, growing season, inter-cropping and double cropping in respect of rainfed/dryland farming.

2.36 Recognising the importance of dry-land farming the Revised 20-Point Programme gives high priority to development and dissemination of technology and inputs for dry-land agriculture. A comprehensive strategy for dry-land farming has been prepared in consultation with the State Governments and agricultural scientists, combining both intensive and extensive approaches. Under the intensive approach selected micro-water sheds, each of about 1,000 hectares, are taken up for intensive integrated development through a multifarious programme of crop production, horticulture, agro-forestry, pasture development, and land and water management. The extensive approach aims at the fullest possible utilisation of known technology of dry-land farming, including the use of seed/fertiliser drills and other improved implements, application of fertilisers, drought-resistant seeds, adoption of suitable cropping patterns, deepening/renovation of tanks and ponds and promotion of inter-cropping, double cropping, agro-forestry, etc.

2.37 During 1982-83, a total of 4,246 micro-watersheds were identified by the States, as against the target of 3,824. The area covered is about 2.92 million hectares. During 1983-84, efforts are being focused on saturating the selected watersheds with dry-land farming technologies and rainfed farming practices. Some of the important steps taken for this purpose include (i) constitution of a Multi-disciplinary Committee headed by a Project Officer for each micro-watershed for planning, implementation and monitoring of the integrated development of each watershed, (ii) preparation of a suitable development programme for each watershed, (iii) preparation of watershed budgets from the earmarked funds for the identified programmes in the Central and State Plans, (iv) training of staff, and (v) giving preferential treatment to the selected watersheds in the distribution of agricultural inputs, seed mini-kits, credits and in the implementation of various Central and State sector programmes.

2.38 Other dry-land farming development programmes include the taking up of 46 Integrated Projects for the development of dry-land farming on watershed basis. These projects are intended to serve as Model Centres where farmers from neighbouring areas can come and see for themselves the scientific techniques and practices on dry-land farming which they could adopt on their lands. The Centre is assisting the States through two Centrally-sponsored projects for dissemination of dry-farming technologies. One such project aims at demonstrating water harvesting and conservation technologies in dry-land areas. The other project envisages development of dry-land agriculture through propagation of suitable agronomic practices including popularization of seed-cum-fertiliser drills, growing of improved varieties and application of fertilisers. Besides this, a massive

project for the Development of Agriculture for Small and Marginal Farmers is to be implemented in about 5,000 blocks at a cost of Rs. 250 crores per annum. Under this programme, liberal financial assistance is proposed to be extended to the farmers in the dry-land areas also. Besides, special projects on rainfed farming are being formulated for implementation in Andhra Pradesh, Karnataka, Madhya Pradesh and Maharashtra. These projects are likely to cover an area of about 2.5 lakh hectares at a cost of about Rs. 45 crores.

2.39 To sum up, performance of Indian agriculture in 1983-84 provides welcome endorsement of the dynamism in the sector. After the record production of 1978-79, foodgrains production during the next four years had fluctuated between 110—133 million tonnes and in this period fear was expressed that Indian agriculture could be losing its growth momentum. The expected production of 142—144 million tonnes in 1983-84, however, marks a clear breakthrough to a significantly higher production level. The basic strategy that has been followed has clearly paid off. However, much remains to be done to ensure continuous growth in future.

2.40 Considerable progress has been achieved in covering foodgrains area under high-yielding varieties, particularly in the case of wheat with a coverage of 80 per cent. However, the saturation point is still far away. In the case of paddy, the major foodgrain crop, only half of the cropped area has been covered by the H.Y.V. programme. Even larger leeway has to be made in the case of coarse cereals. The network for seed certification and distribution of quality seeds has to be effectively expanded. The programme of seed replacement also deserves special attention.

2.41 The use of chemical fertilisers has been growing at an uneven pace during the past few years. During the three years ended 1978-79 annual growth in fertiliser consumption was 18 to 26 per cent. In the next four years, it grew by only 3 to 10 per cent per year. *Kharif* 1983, however, recorded a jump of 22 per cent over *kharif* 1982. Consumption of fertilisers during the *rabi* season is also expected to mark an increase over last year's

level. Fertiliser-use efficiency, as measured by additional agricultural production from the additional fertiliser consumption, can be significantly raised through the concentration of promotional efforts in the promising, but inadequately covered, regions/crops.

2.42 Irrigation coverage, in terms of utilisation, has increased from 1.9 million hectares per annum during the three years ended 1980-81 to 2.3 million hectares per annum during the three years ending 1983-84. The recent data show some progress in the field of utilisation of irrigation potential already created. However, more efforts are required to reduce the gap between the potential created and its utilisation. Proper repairs and maintenance of the existing irrigation works should be a prior charge on the resources allocated to the irrigation sector. The Command Area Development Programme needs to be effectively implemented in order to optimise the benefits of the irrigation schemes.

2.43 The important task now is to intensify the programmes developed since the mid-sixties, which led to the ushering in of the Green Revolution, and their extension to crops and regions where they have not yet taken firm hold. At the same time, new elements have to be introduced in the agricultural strategy from time to time so as to keep up the growth momentum. Bio-gas programme as a source of organic manure, harnessing of bio-fertilisation techniques, adjustments in the cropping pattern including sowing/harvesting time schedule to suit natural endowments, and raising the level of technology in dry-land agriculture are some of the most promising areas. From a long run point of view, the growth of the agricultural sector will also require breakthrough in dry-farming which underscores the need for paying urgent attention to the problems of dry-land agriculture. The rain-fed area is twice that of area with irrigation facilities. Productivity growth in the rainfed agriculture would make an important contribution to production, particularly in the priority areas of oilseeds and pulses. Efforts initiated in this direction have to be continuously intensified because these hold the key to increased productivity and a more equitable socio-economic order in the agricultural sector.