

CHAPTER 2

AGRICULTURAL PRODUCTION

Agricultural production increased by 15.3 per cent in 1980-81 over the drought level of 1979-80, and further by 5.5 per cent in 1981-82. During the current kharif season the unsatisfactory progress of the monsoon caused a setback to kharif production. However, rainfall during October 1982—January 1983 in the Western and North-western regions was by and large satisfactory, and steps were taken to maximise the foodgrain production in the rabi season. The prospects of rabi crops seem better than last year and it should be possible to recoup a part of shortfall in kharif foodgrains production. The present assessment is that the overall foodgrains production during 1982-83 might be 5—8 million tonnes lower than last year's record crop of 133 million tonnes.

2.2 Agricultural policy has continued to emphasise expansion in irrigation, increased use of fertilisers, high-yielding varieties of seeds, plant-protection measures, agricultural extension and a positive agricultural price policy. Special efforts have been made to raise production of pulses and oilseeds, and to achieve a better varietal balance in cotton and stability in sugarcane production.

Performance in 1981-82

2.3 Agricultural production increased by 5.5 per cent during 1981-82. This growth was contributed

by both the kharif and rabi production. Foodgrains production increased from 129.6 million tonnes in 1980-81 to 133.1 million tonnes in 1981-82. Production of rabi cereals increased by 1.9 million tonnes, of kharif cereals by 0.9 million tonnes and of pulses, mainly during kharif, by 0.7 million tonnes to make up the total increase in foodgrains production of 3.5 million tonnes. The increase in agricultural output could have been higher if weather conditions during 1981-82 had been ideal and rabi production had not been affected by untimely rains in May 1982.

2.4 The South-West monsoon started well in time in Kerala and Coastal Karnataka, but became erratic subsequently. Standing kharif crops suffered from prolonged absence of rain, particularly in the Punjab, Haryana, Uttar Pradesh, Rajasthan and Madhya Pradesh. Efforts were made to protect standing crops in the irrigated areas by diverting electricity from non-agricultural activities to tube-wells and pumpsets, and by enhanced releases of canal water. Fortunately, late-September, 1981 rains were good and helped retrieve the situation. As a result, the total kharif foodgrains production in 1981-82 at 79.1 million tonnes was marginally higher than 77.6 million tonnes in 1980-81.

TABLE 2.1

Agricultural Production

Crop	(Million tonnes/bales*)									
	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82
1	2	3	4	5	6	6	8	9	10	11
Rice	39.25	44.05	39.58	48.74	41.92	52.67	53.77	42.33	53.63	53.59
Wheat	24.74	21.78	24.10	28.85	29.01	31.75	35.51	31.83	36.31	37.83
Other cereals	23.13	28.83	26.13	30.40	28.88	30.02	30.44	26.97	29.02	30.29
Pulses	9.91	10.01	10.02	13.04	11.36	11.97	12.18	8.57	10.63	11.35
Foodgrains	97.03	104.67	99.83	121.03	111.17	126.41	131.90	109.70	129.59	133.06
Oilseeds (5 major)	6.86	8.85	8.53	9.91	7.83	9.00	9.35	7.86	8.08	10.90
Sugarcane (gur)	12.76	14.43	14.72	14.41	15.85	17.96	15.73	13.09	15.77	18.73
Cotton (Lint)*	5.74	6.31	7.16	5.95	5.84	7.24	7.96	7.65	7.01	7.83
Jute & mesta*	6.09	7.68	5.83	5.91	7.10	7.15	8.33	7.96	8.16	8.40
Potato	4.45	4.86	6.23	7.31	7.17	8.14	10.13	8.33	9.67	9.94(P)

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

2.5 Rains in September-October, 1981 also facilitated the preparation of soil for the ensuing rabi sowings. Winter rains were, by and large, good and beneficial to the standing rabi crops. However, the untimely rains during May, 1982 caused significant damage both in terms of quantity as well as quality of foodgrains. Even then, foodgrains production at 53.9 million tonnes registered an increase of 2 million tonnes over the previous year.

2.6 Cash crops recorded notable progress during 1981-82. Groundnuts production increased to 7.2 million tonnes, compared with the previous best of 6.8 million tonnes in 1975-76 and 5.0 million tonnes in 1980-81. The total oilseeds output in 1981-82 recorded an increase of 35 per cent over 1980-81. Sugarcane output increased to 18.7 million tonnes (in terms of gur), compared with the previous best of 18.0 million tonnes in 1977-78. The sharp increase of 18.8 per cent in sugarcane production in 1981-82 was achieved on top of 20.5 per cent increase in 1980-81. Production of jute rose to 6.8 million

bales compared with the previous best of 6.5 million bales in 1980-81. Cotton output increased by 11.7 per cent from 7.0 million bales in 1980-81 to 7.8 million bales in 1981-82. Similarly, production of tobacco increased from 4.8 lakh tonnes in 1980-81 to 5.3 lakh tonnes in 1981-82.

Prospects in 1982-83

2.7 In 1982 South-West monsoon, which provides precipitation for kharif crops during June-September, was delayed by about three weeks and then withdrew early. Bihar and Tamil Nadu received deficient rainfall, the shortfall being 32-37 per cent of the 'normal'. Northern Himayalan belt of Jammu & Kashmir, Himachal Pradesh and Western U. P. hill districts also experienced deficient rainfall. In western Rajasthan and Gujarat, which provide substantial output of coarse grains in addition to groundnut and cotton, the deficiency in rainfall was 27 to 50 per cent of the normal. Vidarbha region of Maharashtra, which is a major producer of cotton and groundnut, had a shortfall of about 27 per cent.

Rainfall during June-September, 1982

Excess	Normal	Deficient	Scanty
Nil	Arunachal Pradesh, Assam and Meghalaya, Nagaland, Manipur, Mizoram & Tripura, West Bengal & Sikkim, Orissa, East Uttar Pradesh, Plains of West U.P., Haryana, Punjab, East Rajasthan, Madhya Pradesh, Konkan & Goa, Madhya Maharashtra, Marathwada, Coastal Andhra Pradesh, Telangana, Karnataka State, Kerala and Lakshadweep	Bihar State, Hills of West Uttar Pradesh, Himachal Pradesh, Jammu & Kashmir, West Rajasthan, Gujarat State, Vidarbha, Rayalaseema and Tamil Nadu	Nil

Note : Excess—plus 20 per cent or more.

Normal—plus 19 per cent to minus 19 per cent.

Deficit—Minus 20 per cent to minus 59 per cent.

Scanty—Minus 60 per cent or less

2.8 Failure of the late-September/early October rains, popularly known as *hathia* rains, over large kharif growing areas further affected the kharif crops. Floods in Orissa and cyclonic storm over Saurashtra in early November also caused widespread damage to the standing crops. As a result, kharif crops during 1982-83 were badly affected, particularly in the rain-fed areas. Parts of the country faced drought conditions. Urgent steps were taken to minimise the loss in kharif production in 1982-83. Adequate supplies of diesel oil and electric power were assured to the growers so that pump-sets and tube-wells could be worked to full capacity. Similarly, supplies of fertilisers were arranged over wider areas for improving the overall consumption of fertiliser. These measures were followed up by maintaining adequate supplies of foodgrains through the public distribution system in the drought-affected areas.

2.9 At the same time energetic rabi campaigns were launched to offset the losses suffered during kharif in the rain-fed areas. Detailed guidelines were sent to the States to draw up and realise rabi production targets for cereals, pulses and oilseeds—district, block

and village-wise. States were requested to constitute empowered committees at the state level and co-ordination committees at district and block levels, to ensure adequate and timely supplies of inputs, including seeds, fertilisers, weedicides and pesticides, and credit at the farm level. Optimum utilisation of irrigation facilities was to be ensured through the release of adequate water into the canals, adequate supplies of diesel oil, and 10-hour uninterrupted supply of electricity for operating pump-sets and tube-wells. Wheat, mustard, gram and summer moong and groundnut are expected to benefit considerably from the rabi campaign. Rainfall during October-December 1982 has been deficient in some of the traditional rabi growing regions in the country, particularly in Uttar Pradesh. It was normal or excess in Bihar Plains, Punjab, Madhya Pradesh, Madhya Maharashtra, Andhra Pradesh, Tamilnadu, Rajasthan and Gujarat. Good winter rains could substantially strengthen the success of the measures taken to boost rabi production and it may be possible to recover some of the loss suffered in kharif output. However, the overall outlook for agriculture during 1982-83 is not encouraging and production will show a decline. Foodgrains production

is likely to be lower by about 5-8 million tonnes, although cash crops may not fare badly.

Agricultural Inputs : Trends and Problems

2.10 Given the limitation of the land resources, agricultural production can be increased only through a sustained growth in crop yields. Such a growth in productivity is attainable, provided the needed physical inputs are made available in time, in adequate quantity and at economic prices. This has been established by the experience in wheat and rice during the last decade or so.

Fertilizers

2.11 Use of chemical fertilizers accelerated since the early 1970s and has been an important factor in raising agricultural productivity. The appearance of high-yielding, fertiliser-responsive varieties of seeds and increased irrigation facilities assisted this growth. Total consumption of fertilisers (nitrogenous, phosphatic and potassic) increased from 294 thousand tonnes in 1960-61 to 2.26 million tonnes in 1970-71, and to 5.5 million tonnes in 1980-81.

2.12 Fertiliser consumption, which slowed down in 1979-80 due to severe drought, did not fully pick up until 1981-82 when it increased by about 10 per cent (from 5.5 million tonnes in 1980-81 to 6.1 million tonnes in 1981-82). During the current year, the off-take of fertiliser was quite low in the beginning mainly because of its easy availability in the markets, which restrained farmers from early stocking and the uneven south-west monsoon. However, it is reported to have picked up since the beginning of the rabi season.

2.13 Available data on fertiliser consumption and prices, however, suggest that prices alone do not determine the level of fertiliser use, and the impact is different as between crops and for different regions and farms. The increasing awareness of the economics of fertilizer use, availability of irrigation facilities, evolution and increasing availability of high-yield-

ing seed varieties, adoption of new plant protection materials and techniques and a positive price policy are also important in achieving a sustained growth in fertiliser consumption. Weather conditions, of course, play a crucial role.

2.14 A number of steps have been taken to promote consumption of fertilisers. Higher amounts of short-term credits are being provided through co-operative banks, regional rural banks and commercial banks to enable farmers to purchase fertilisers and other inputs. The fertiliser promotion campaign being carried out in 67 selected districts of the country earlier has been extended to 103 districts during 1982-83. Lead manufacturers have been identified and targets fixed for fertiliser consumption and opening of retail sale points in each of these districts. To ensure that the farmers get adequate supply of fertilisers nearer home, a target of 15,000 additional retail sales points has been set for 1982-83. The Food Corporation of India, which is the major handling and distribution agency for imported fertilisers, has set up its own marketing organisation and has appointed its own dealers throughout the country for distribution of fertilisers. The Corporation proposes to appoint dealers in each district at the Block level. A scheme for supply of fertiliser minikits has been launched for the first time this year. Under the scheme, 20 kgs. of fertiliser are supplied to selected small and marginal farmers affected by aberrant weather conditions in selected dry-land districts of the country. The departments of agriculture in states have been asked to ensure that the supplied material is applied to the soil, as per recommended package of practices.

2.15 As a result of rapid increase in fertiliser consumption in recent years, India now occupies the fourth rank (after China, U.S.A. and the U.S.S.R.) in the world community in the consumption of nitrogenous fertilisers, and the sixth position amongst the users of phosphatic fertilisers. In terms of per hectare input of nutrients, however, the country is still far behind the nations with modern, progressive agricultural sector, or even the world average.

TABLE 2.2

Consumption of Nutrients in Agriculture—1980-81

Country	(Kgs. per hectare)			
	N	P	K	Total
New Zealand	46	762	210	1018
Netherland	561	96	132	789
German Fed. Rep.	207	112	153	471
Japan	126	141	105	372
Republic of Korea	204	89	83	376
U.K.	177	58	59	294
France	115	95	91	301
Italy	81	59	30	170
China	122	28	5	155
U.S.A.	56	26	30	112
U.S.S.R.	36	24	21	81
Canada	21	14	8	43
Australia	6	19	3	28
India	21	6	4	31
World	41	22	17	80

2.16 The focus of attention of the extension agencies so far has been on maximising fertiliser consumption in order to overcome soil deficiencies and ensure larger harvests. In the context of emerging resource constraint, however, greater attention needs to be given to maximising the benefits from the use of fertilisers. Effective extension and educational campaigns should highlight the loss of nutrients due to wrong application of fertilisers. It is also necessary to analyse the problem of regional and crop-wise imbalances in fertiliser use. Certain regions and crops use disproportionately large amount of fertilisers, while in several others fertiliser use is marginal. In the latter cases application of even small dosages of fertilisers could bring about substantial increase in yields.

2.17 Keeping in view the growing use of fertilisers, steps are being taken to increase indigenous fertiliser production in a significant way. With the availability of the off-shore gas on the West-Coast, adequate indigenous raw material is now available for increasing nitrogenous fertiliser production. However, the

country is still heavily dependent on import of raw materials required for production of phosphatic fertilisers. About 80 per cent of our requirements of rock phosphate and the entire requirements of sulphur, needed for the manufacture of phosphatic fertilisers, are met through imports. With the substantial increase in the indigenous fertiliser production, imports of fertilisers have decreased significantly. India, however, continues to be a major importer of fertilisers and exerts a significant influence on international fertiliser prices.

2.18 A total manufacturing capacity of 5.3 million tonnes in terms of nitrogen has already been established in India. Additional capacity of 4 million tonnes is expected to be created in the coming 8 years when four fertiliser units under construction at Thal-Vaishet and Hazira and 6 other proposed gas-based plants are commissioned. In the case of phosphatic fertilisers, the total capacity in existence at the end of 1982 was 1.42 million tonnes of P_2O_5 and this is expected to increase to 2.6 million tonnes by 1989-90.

TABLE 2.3

Production and Capacity Utilisation of Indian Fertilizer Industry

Year	Production : '000 Tonnes of Nutrients Capacity utilisation : Percentage of mid-year capacity					
	Nitrogenous		Phosphatic		Total	
	Production	Capacity utilisation	Production	Capacity utilisation	Production	Capacity utilisation
1960-61	98	69.1	52	56.2	150	64.3
1965-66	233	73.4	111	63.4	344	69.7
1970-71	830	61.7	229	52.6	1,059	59.5
1975-76	1,535	64.3	320	46.6	1,855	60.3
1980-81	2,164	52.8	841	65.9	3,005	55.9
1981-82	3,144	66.9	949	70.1	4,093	68.2

2.19 Over the years, the share of domestic production in meeting the total domestic demand has been increasing. Production in 1981-82 at 4.1 million tonnes of nutrients was 67.5 per cent of the total fertiliser consumption of 6.1 million tonnes in that year. This may be compared with 47.0 per cent in 1970-71 and 54.5 per cent in 1980-81. However, the costs of production of the domestic fertiliser industry have been higher than the landed costs of im-

ported fertilisers. As such, substantial subsidies have to be given on domestic production. With the increasing level of domestic production, the total cost of subsidy to the exchequer has also increased. Since the total consumption of fertilisers is likely to increase further, large amount of subsidy on fertilisers cannot be sustained. It would be necessary to reduce cost of production so that fertilisers can be made available to farmers at reasonable prices.

TABLE 2.4

*Fertiliser Subsidy**

Year	(Rs. crores)		
	Subsidy for imported fertilisers	Subsidy for indigenous fertilisers	Total
1977-78	159	107	266
1978-79	169	173	342
1979-80	282	321	603
1980-81	335	170	505
1981-82	111	275	386
1982-83 (Estimated)	98	550	648

*The difference between receipts and payments into the pool is taken as subsidy on imported fertilisers. On indigenous fertilisers it includes the impact of transport subsidy and the difference between retention price and the consumer price, less the distribution margin in respect of the nitrogenous and phosphatic fertilisers.

Irrigation

2.20 Development of irrigation has commanded a high priority in the national plans, and is an important item in the revised 20-Point Programme. The total irrigation potential of 22.6 million hectares in existence in 1950-51 had increased to 56.6 million hectares in 1979-80. Additional irrigation potential of 2.1., 2.3 and 2.5 million hectares respectively was created in 1979-80, 1980-81 and 1981-82. This may

be compared with an average of about one million hectares during 1950-51 to 1970-71. During 1950-51 major/medium irrigation sources accounted for 43 per cent of the total irrigation potential. This share increased to 47 per cent by 1979-80. In the additional potential of 34 million hectares created during this period the contribution of major/medium schemes was 16.9 million hectares and that of the minor schemes 17.1 million hectares.

TABLE 2.5
Development of Irrigation Potential and its Utilisation

(Million hectares)						
1	Major & Medium Schemes		Minor Schemes		All Schemes	
	Potential	Utilisation	Potential	Utilisation	Potential	Utilisation
	2	3	4	5	6	7
1950-51	9.7	9.7	12.9	12.9	22.6	22.6
1977-78	24.8	21.2	27.3	27.3	52.1	48.5
1978-79	25.9	22.1	28.6	28.6	54.5	50.7
1979-80	26.6	22.6	30.0	30.0	56.6	52.6
1980-81	27.5	23.2	31.4	31.4	58.9	54.6
1981-82	28.5	24.6	32.9	32.9	61.4	57.5
Ultimate Potential	58.5		55.0		113.5	
<i>Additional Coverage</i>						
1979-80 over 1950-51	16.9	12.9	17.1	17.1	34.0	30.0
1981-82 over 1977-78	3.7	3.4	5.6	5.6	9.3	9.0
<i>Sixth Plan Targets</i>						
1984-85 over 1979-80	5.7	5.6	8.0	8.0	13.7*	13.6

*Since raised to 14.0 million hectares.

- NOTES : 1. Minor surface irrigation projects are those with a cultural command area (CCA) upto 2,000 hectares. Medium projects are those with a CCA above 2,000 hectares upto 10,000 hectares. Major projects have a CCA greater than 10,000 hectares.
2. Irrigation potential is the theoretical gross area that can be irrigated by the infrastructure constructed and is, therefore, the cultivated area to be irrigated multiplied by the cropping intensity. Potential is counted as utilised when farmers actually convey water from the outlet and apply it on their fields.

2.21 It is estimated that about 22 per cent (4 million hectares) of the additional major/medium irrigation potential created during 1950-51 upto 1979-80 remained unutilised. In the subsequent years also, there has not been any major improvement in this regard. This is a matter for concern, because the cost of creating additional irrigation potential has gone up substantially. For example, the capital cost per hectare of major/medium irrigation schemes, at constant (1970-71) prices, increased from Rs. 2,770 in the First Plan to Rs. 5,880 in 1979-80, and further to Rs. 6,969 as per the Sixth Plan projections.

2.22 A programme for the integrated development of command area was launched during the Fifth Plan period (1974-78). This provided for the creation of a new institutional infrastructure, Command Area Development Authority, for selected major and medium S/14 M. of Fin./82-3.

projects. The main emphasis of the programme was on the efficient operation of the irrigation system, and the development of the main drainage system; construction of field channels and drains; land shaping and land levelling; lining of field channels/water courses; exploitation of ground water through tubewells, open wells, etc; adoption and enforcement of suitable cropping patterns; enforcement of a suitable rostering system of distribution of water among farmers (wara-bandi); and strengthening of extension, training and demonstration organisations etc. During the Fifth Plan period 38 C. A. D. Authorities were set up, covering 50 major irrigation projects. By the end of March 1981, the number had increased to 44, covering 71 projects. In all 76 command area projects with an ultimate potential of 15 million hectares have been identified.

2.23 The progress of the implementation of the programme of constructing field channels varies from state to state. In Gujarat and Uttar Pradesh around two-thirds and in Karnataka and Maharashtra about half of the cultivable command area has been covered by field channels by March, 1982. The progress is unsatisfactory in other States.

TABLE 2.6
Cultivable Command Area Covered under Field Channels

State	Percentage of CCA covered under Field Channels
1. Andhra Pradesh	24.1
2. Assam	37.3
3. Bihar	14.9
4. Gujarat	66.6
5. Haryana	1.0
6. Jammu & Kashmir	38.3
7. Kerala	Neg.
8. Karnataka	49.8
9. Madhya Pradesh	42.9
10. Maharashtra	48.0
11. Orissa	7.0
12. Rajasthan	44.1
13. Uttar Pradesh	65.9
14. West Bengal	0.5
15. Tamil Nadu	8.7

2.24 Equally crucial is the adequate maintenance and repair of the existing irrigation system. Maintenance and repair of the irrigation systems lies under the purview of State Governments. It is necessary to allocate adequate funds to ensure proper maintenance and efficient operation of the existing systems. Under the constrained resource situation optimal utilisation of the existing potential may well be more desirable than the taking up of large new schemes.

2.25 Another aspect of better capacity utilisation relates to the gross availability of water in the system and the economic life span of a project. Conveyance losses in the canal systems are very high, and it was estimated in 1960 that over 6 million hectares of additional land could be irrigated by lining the canal systems. The situation does not seem to have improved much since then. Similarly, live storage capacity and withdrawal of water from the reservoirs could be optimised through control on situation which would also enhance the economic life-span of the projects. It is necessary to strengthen the infrastructure to monitor the performance of each major/medium project in respect of important elements like annual inflow of water, rate and location of silt deposits, annual drawoff of water, conveyance losses etc.

2.26 Minor irrigation projects cost much less and promote rural capital formation because a part of the investment is funded through the farmers' own savings,

Time-lag between investment decision and the flow of benefits is comparatively small. The problem of non-utilisation of the created minor irrigation potential often arises on account of factors like inadequate availability of power, diesel oil and poor maintenance of equipments etc.

2.27 The growth in minor irrigation has been rapid since the mid-1960s. The minor irrigation potential increased from 17.0 million hectares in 1965-66 to 27.3 million hectares by 1977-78, and further to 32.9 million hectares by 1981-82. Indeed, during the 4 years—1978—82 the minor irrigation potential increased by 5.6 million hectares, compared with the increase of 3.7 million hectares in major and medium irrigation projects during the same period. There is substantial scope for further raising the irrigation potential through minor irrigation schemes, particularly in the regions outside the Punjab-Haryana belt in the north and Tamil Nadu in the south. Minor irrigation needs to be given a high priority in the works undertaken under the Integrated Rural Development Programme, Drought-prone Areas Programme, Desert Development Programme, and the National Rural Employment Programme.

Main Concerns of Agricultural Policy

2.28 Pulses, oilseeds, cotton and sugarcane have been some of the major areas of instability in Indian agriculture. Wide fluctuations in their production often overshadow the growing resilience displayed by overall agricultural production.

Pulses

2.29 The production of pulses, a major source of protein, continues to stagnate. As a result, per capita availability has declined and limited scope of imports constrains the effort to effectively manage their supplies. Pulses are, by and large, monsoon crops and, unlike wheat and rice, varietal improvement has not yet been achieved in any significant measure. Recognising their importance in the Indian diet, the revised 20-Point Programme has emphasised special efforts for raising the production of pulses rapidly.

2.30 In the short run, funds have been allocated for dissemination of improved cultivation practices, distribution of certified seeds, and plant protection chemicals and equipment at subsidised rates under the centrally sponsored scheme. The supply of certified seeds for kharif pulses was 2.9 thousand tonnes in 1981-82. For popularising short duration improved varieties of pulses, 3.94 lakh mini-kits of pulses containing improved seeds were freely distributed during 1982-83 as against 63,000 during 1981-82. There is substantial scope for increasing the supply of certified seeds as at present only 3 per cent of the area gets these seeds. Subsidies are being provided to growers for adopting plant protection measures. However, the pace of adoption of integrated pest control and its management at the farm level

is not satisfactory. It is necessary to provide public plant protection cover in predominantly pulse-producing districts/areas on a selective basis.

2.31 In the long run, a high rate of growth in pulses production can be achieved only through a varietal break-through and improved cultural practices. Traditionally, pulses are grown on dry lands, and are selected more for adaptation to moisture stress conditions rather than for high yields. The evolution of some short-duration varieties of tur, moong, and urad has made it possible to dovetail these crops into the existing crop rotations, enabling additional crops under both irrigated and unirrigated conditions. This has also resulted in better income per unit area for the farmer and has helped in improving the soil fertility.

2.32 In the case of tur (arhar) popularisation of early maturing varieties like T 21, UPAS 120 and Prabhat in the northern wheat belt would help in bringing substantial area under arhar-wheat rotation. Similarly, potential exists for extending cultivation of rabi moong/urad to the rice fallow, utilising residual moisture, in eastern and southern States. Moong as a catch crop after harvesting wheat in the irrigated area is reported to have become quite popular in some States, specially Uttar Pradesh and Bihar. Efforts have to continue to bring more area under these additional crops.

Oilseeds

2.33 In oilseeds also, as in the case of pulses, the country has been facing shortage of supplies in relation

to requirements and special efforts have been made to augment their production under Central and State programmes. An Integrated Oilseeds Maximisation Programme has been launched under the revised 20-Point Programme. The Programme lays emphasis on the production and distribution of improved seeds; promotion of the application of fertilisers, specially phosphatic fertilisers, to groundnut and soyabean crops; extension of oilseeds to newly irrigated areas; adoption of adequate and timely plant protection measures on an area-wise basis; and demonstration of improved cultivation practices.

2.34 A significant change has been taking place in the recent years in the pattern of groundnut cultivation. Traditionally, it has been a kharif crop, grown under rain-fed conditions. However, lately it is becoming popular as a summer crop in the irrigated areas in the states of Andhra Pradesh, Tamil Nadu, Karnataka, Gujarat and Maharashtra. A special project is being implemented for intensive production of summer/rabi groundnuts in Saurashtra region of Gujarat. In fact in 1981-82 rabi crop contributed more than 25 per cent to the total production of groundnuts. This trend needs to be sustained and further accelerated as the yield per hectare of summer groundnut is much higher than that of the kharif crop. For the country as a whole, it was 876 kgs. for kharif groundnut, compared with 1546 kgs. for rabi in 1981-82. Since rabi groundnut can yield good results only in areas with assured irrigation, its cultivation should be promoted under the on-going scheme of Extension of Oilseeds to New Irrigated Areas.

TABLE 2.7

Area under Summer/Rabi Groundnuts

1	('000 hectares)					
	2	3	4	5	6	7
	Andhra Pradesh	Karnataka	Gujarat	Maharashtra	Tamil-Nadu	All India
1976-77	122	37	193	381
1977-78	184	66	17	..	282	594
1978-79	218	72	25	19	294	697
1979-80	244	78	69	24	264	763
1980-81	224	84	150	122	223	894
1981-82	257	85	167	148	321	1072

2.35 Centrally sponsored schemes are being implemented for the development of soyabean and sunflower cultivation. A special project has been taken up for soyabean development in Madhya Pradesh.

Largely as a result of these efforts, soyabean cultivation has increased rapidly, particularly in Madhya Pradesh which contributed about 75 per cent of the total area under the crop in 1980-81. There is scope

for expanding soyabean cultivation further. For instance, soyabean can be cultivated in lands lying fallow in kharif season; it can also replace crops like ragi after which farmers can grow another crop of wheat.

2.36 The most important state in the case of sunflower seed is Maharashtra, which accounted for 63 per cent of the total area under the crop in 1981-82. The other States where sunflower seed cultivation is picking up are Karnataka and Tamil Nadu.

TABLE 2.8
Area under Soyabean and Sunflower Seed

	('000 hectares)	
	Soyabean	Sunflower seed
1976-77	125	N.A.
1977-78	195	N.A.
1978-79	306	N.A.
1979-80	497	61
1980-81	600	119
1981-82	N.A.	228

Cotton

2.37 Cotton production continues to grow, but a varietal imbalance has re-emerged which is, however,

different from what it was during 1950s and 1960s. During the earlier period, India imported, on an average, about 8 lakh bales of raw cotton per annum to feed the domestic textile industry. These imports consisted of long and extra-long staple cotton. At the same time, there were regular annual exports of around 2.5 lakh bales of short-staple, mainly Bengal Deshi, cotton, which was found surplus to the requirements of the domestic industry. A number of measures were taken to correct this imbalance and to prevent the huge outgo of foreign exchange on cotton imports. These measures aimed at encouraging the domestic production of long and extra-long staple cotton varieties, and keeping the mill demand for such varieties under check. Plant-breeders were encouraged to evolve new varieties of cotton with the desired characteristics and suitable for cultivation in distinct agro-climatic conditions obtaining in the cotton growing regions. Minimum support prices and the procurement prices of public sector agencies were modified to provide further incentives for the cultivation of long and extra-long and staple cotton varieties. As a result, production of the superior long staple and superior cotton increased from 11.8 lakh bales in 1965-66 to 29.9 lakh bales in 1979-80. During the same period the production of superior medium cotton increased from 21.0 lakh bales to 32.7 lakh bales. However, the production of medium staple cotton declined from 9.7 lakh bales in 1965-66 to 5.9 lakh bales in 1979-80. Due to this decline, textile mills experienced shortages of medium staple cotton, which had to be imported.

TABLE 2.9
Staple-wise Production of Cotton Lint

Staple Lengths	(Lakh Bales of 170 kgs. each)					
	1965-66	1975-76	1976-77	1977-78	1978-79	1979-80
1	2	3	4	5	6	7
Superior Long and Long	11.8	16.1	17.0	24.1	30.1	29.9
Superior Medium	21.0	26.7	26.8	32.4	33.8	32.7
Medium	9.7	8.1	7.2	9.3	8.3	5.9
Short	7.9	8.6	8.4	6.6	7.4	8.0
Total	50.4	59.5	58.4	72.4	79.6	76.5

2.38 Efforts have been made to export superior long staple cotton. Cotton exports totalled 5.3 lakh bales in 1979-80 (September-August) and increased further to 6.6 lakh bales in 1980-81. The export drive needs to be further strengthened because now the country has achieved production capacity that could ensure exportable surpluses on a regular basis.

It is necessary to develop new varieties with high yield potentials, which are suitable for the different agro-climatic regions of the country. It is also necessary to ensure efficient use of costly inputs like fertilisers, chemicals, pesticides, and fungicides and thereby minimise the production costs.

Sugarcane

2.39 Sugarcane acreage and production have been showing considerable annual fluctuations during the past few years. The wide swings in acreage and production follow a cyclical pattern—excess production induced by high prices being followed by a sharp decline in prices, which, in turn, reduces acreage and production, leading again to high prices. At present sugar economy is passing through a phase of excess production in relation to both internal and external demand. Sugarcane production established a new peak (18.7 million tonnes in terms of gur) in 1981-82, and an equally good crop is expected in 1982-83.

2.40 Sugarcane is a highly water-intensive and fertiliser-intensive crop. As profits from the cultivation of sugarcane are disproportionately high in comparison with other crops, misallocation of scarce inputs such as irrigated acreage and fertiliser towards sugarcane and away from other crops such as cereals, pulses and oilseeds has taken place. The proportion of irrigated area to total area under sugarcane increased from 72 per cent in 1971-72 to 77 per cent in 1978-79. The comparable increases were for rice from 37 per cent to 42 per cent and for wheat from 54 per cent to 65 per cent. In contrast, the proportion of irrigated area under pulses to the total area declined from 8.8 per cent in 1971-72 to 7.9 per cent in 1978-79.

2.41 The determination of appropriate cane price is obviously central to any attempt to bring a better

balance in the sugar economy. The statutory minimum price of sugarcane serves the purpose of determining the price of levy sugar under the dual price policy scheme. However, actual prices received by the cane-growers from the sugar factories are much higher and depend upon the 'advice' given by the State Governments to the sugar factories. This results in larger area being devoted to sugarcane cultivation. In view of the excess production of sugar for two successive years, even if there were to be some reduction in sugarcane acreage during 1983-84 this may be desirable for bringing about a better balance between production of sugarcane and other competing crops. These aspects have been the basis of the sugar policy package announced in December, 1982.

2.42 In sum, the growth in the agricultural sector is the key to the sustained growth in national income at a reasonably high rate in the country. The agricultural base in the country has been considerably strengthened since the adoption of the strategy of increasing production, with emphasis on extending irrigation, and application of high yielding seeds, fertilisers, credit and field extension. However, despite remarkable increase in foodgrains output during the last decade, this sector still suffers from many problems. It continues to be vulnerable to fluctuations in weather. The momentum of growth in wheat yields has slackened, while in rice it is yet to fully pick up in the major rice-growing states. Some imbalances have emerged in certain crops. It is necessary to reinforce the research and extension efforts, ensure adequate supply of inputs and to step up investment in the agricultural sector.