CHAPTER 2

AGRICULTURAL PRODUCTION

The rainfall this year, both during the monsoon and post-monsoon months, was far below normal and considerably worse than 1985-86. However, despite these poor weather conditions, no significant decline is foreseen in Kharif foodgrains production and some growth in Rabi output is expected. This may be an encouraging indication of a certain degree of resilience developing in Indian agriculture. Overall foodgrains output is anticipated to be around 151.5 million tonnes, about one million tonnes higher than last year.

2.2 Sugarcane production is expected to recover following the stable environment provided to farmers by the two-year sugar policy and the domestic availability of sugar which increased sharply last year, should show a further rise. As a result, imports of sugar will be considerably lower than last year. This year's outlook for production of oilseeds, however, is once again uncertain with rainfall falling for the second year in succession in some of the major oilseed growing regions. A number of policies have been initiated to boost domestic oilseed production and the medium and long term trends are likely to show considerable improvement. Cotton, jute and mesta production this year will not reach the exceptionally high levels—which led to excess supply conditions in 1985-86, but a reasonably good fibre crop is expected. Production of pulses is likely to remain around the level attained in 1985-86.

2.3 After the exceptionally good monsoon in 1983-84, there have been three consecutive years of poor rainfall. The failure of the moonsoon in 1984-85 caused a sharp fall in foodgrain production but, thereafter, production has stablished at higher levels. The apparent levelling-off of agricultural output over the last three years is a direct consequence of an extended period of unfavourable weather conditions. Agricultural production during the last five years has broadly maintained a healthy longer term 3.5 per cent per annum trend growth rate (see graph).

2.4 A weighted index of rainfall during the monsoon months (see charts) shows that the overall level of precipitation this year has been considerably below 1985-86, which in itself was a moderately bad year with below normal rainfall. However, the month-wise distribution of rainfall this year shows a fairly uniform pattern and is unlike the erratic nature of major drought years. So far as prospects for the Rabi crops are concerned, with three quarters of the area under wheat being irrigated, an increase of about 4.5 per cent can be expected in wheat production and a growth of just under 4.0 per cent for Rabi crops as a whole. Kharif output, on the other hand, is likely to be lower by two million tonnes at about 84 million tonnes.

2.5 Stocks of foodgrains with public agencies remain at a comfortably high level of 23.6 million tonnes (December 1986, see graph), reflecting the high growth rate and self-sufficiency achieved in the production of the major cereals, wheat and rice. Large food stocks are an important factor in lowering inflationary expectations on food prices and combating speculation in private foodgrains trade. Nevertheless, there are financial costs associated with large stock holdings and excess stocks of wheat combined with an inadequate production of oilseeds and some other crops are also an indication of certain supply and demand imbalances in Indian agriculture.

2.6 On the demand side, the Government has initiated a number of policies to ensure that foodgrains reach the poorer sections at highly subsidized rates. In addition, to overcome the problem of effective demand among the unemployed and low income groups, there has been substantial expansion of schemes which offer food for employment. Some of the more important policy measures implemented during the year are :

i—additional allocation of rice and wheat to states for public distribution;

ii—open market sales/auctions of wheat;

iii—additional allocation of rice and wheat at concessional rates to Integrated Tribal Development Projects and Nutritional Programmes;

iv—higher allocation of wheat and rice for the National Rural Employment Programme (NREP) and the Rural Labour Employment Guarantee Programme (RLEGP).

In order to reduce the level of stocks held by the Food Corporation of India (FCI), wheat prices were adjusted so that Roller Flour Mills (RFMs) had to buy their wheat directly from the open market instead

of the FCI first procuring the wheat and then supplying it to the RFM's. The policy was particularly successful during the harvesting season when the RFM's purchased only a fraction of their requirements from the FCI and obtained the bulk of their supplies from the open market.

2.7 In order to boost domestic production of oilseeds, the Government initiated three major economic policies to provide more remunerative prices for oilseed farmers and encourage edible oil production. First, edible oil imports were cut back in order to conserve foreign exchange as well as provide a stimulous to domestic oilseed prices and production. The policy was successful as in 1985-86 imports were reduced by 55 per cent in value terms and over 15 per cent in quantity terms—substantial reductions for a single year. The vanaspati industry's use of indigenous oils increased from 35 per cent to over 50 per cent. Second, in order to reduce the intra-year price fluctuations and raise the harvest price for farmers, the policy on releasing imported edible oils for the open market was changed to a contra-seasonal pattern : less edible oil is released during the harvest season to keep prices buoyant for farmers, and greater quantities are released during the lean season to reduce prices and combat speculative trade. The third important policy measure involved a package of fiscal incentives which has been successful in ensuring that a greater quantity of minor oilseeds and rice bran are processed into edible oils and used in vanaspati production. In the 1986-87 Budget, substantial excise duty relief was provided for vanaspati units that utilize minor oils in the production of vanaspati. The minor oils included rice bran oil, mahuwa oil, watermelon seed oil, sal seed oil and mango kernel oil. Excise duty relief was also provided to encourage greater use of cotton seed oil in vanaspati production as well as minor oils in soap manufacture.

2.8 Major policy initiatives have also been taken to stimulate sugarcane and sugar production. The thrust of the new two-year sugar policy is to provide sugarcane farmers with more remunerative prices and to provide a more stable environment by announcing the following year's Statutory Minimum Price of sugarcane well before the sowing of cane begins i.e. prices are announced over a year in advance. Moreover, the diversion of sugarcane to khandsari units had increased substantially—less than 35 per cent of sugarcane was used for sugar production in 1984-85. The sugar policy, therefore, aimed at improving the competitiveness of sugar mills vis-a-vis khandsari units, by making the former more viable. In the process the increased competition for cane improved price and credit terms received by sugarcane farmers. As a result of the policy, sugar production increased by almost one million tonne in 1985-86 and is expected to increase further in 1986-87.

2.9 Finally, in an effort to provide a more secure and certain return to farmers, the Agricultural Price Policy presented to Parliament this year (see Chapter 5) recognised the importance of announcing support prices of crops well in advance of the sowing of the crop. The policy document presents a time table in which a deadline is set for the announcement by the Government of the minimum support price for each crop (see Table). This helps the farmer to make a rational decision on which crop to grow on the basis of an assured minimum price, thus reducing uncertainty considerably.

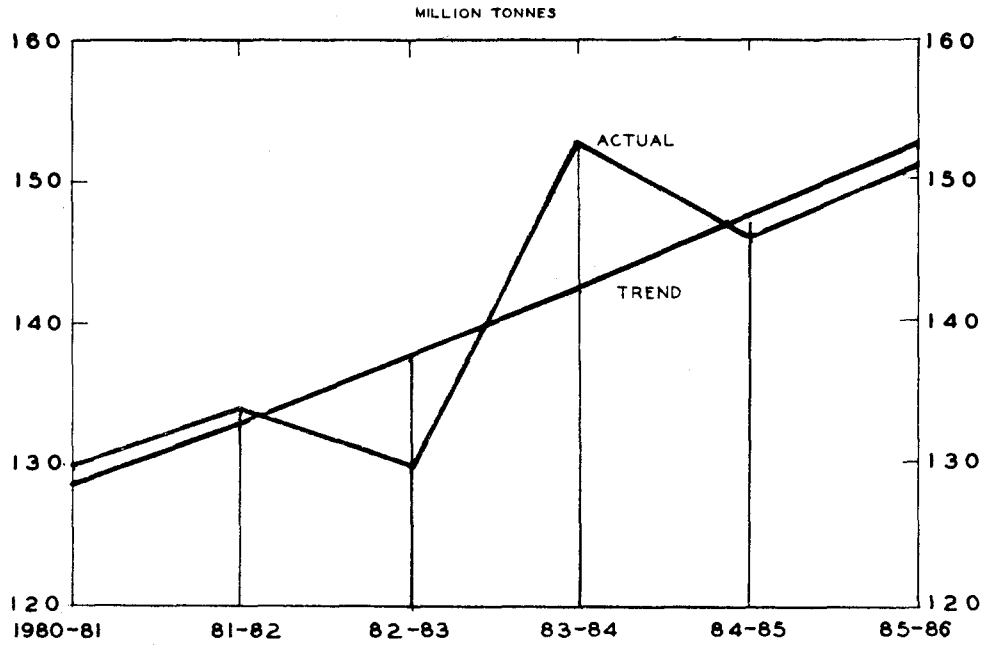
Performance in 1985-86

2.10 The overall production of foodgrains in 1985-86 at 150.5 million tonnes, though not upto the record level of 152.4 million tonnes achieved in 1983-84, nevertheless, marked a significant recovery from the 1984-85 level of 145.5 million tonnes and was a remarkable achievement in the face of a decline of 4.7 million tonnes in the production of coarse cereals. Production of pulses at 13 million tonnes in 1985-86 marked an increase of 1 million tonne over the preceding season's crop and reached the highest level achieved in the past 10 years. New records were set in the production of fibre crops, cotton and jute-mesta—the latter at 12.7 million bales surpassed by over 50 per cent the previous best of 8.4 million bales achieved in 1981-82.

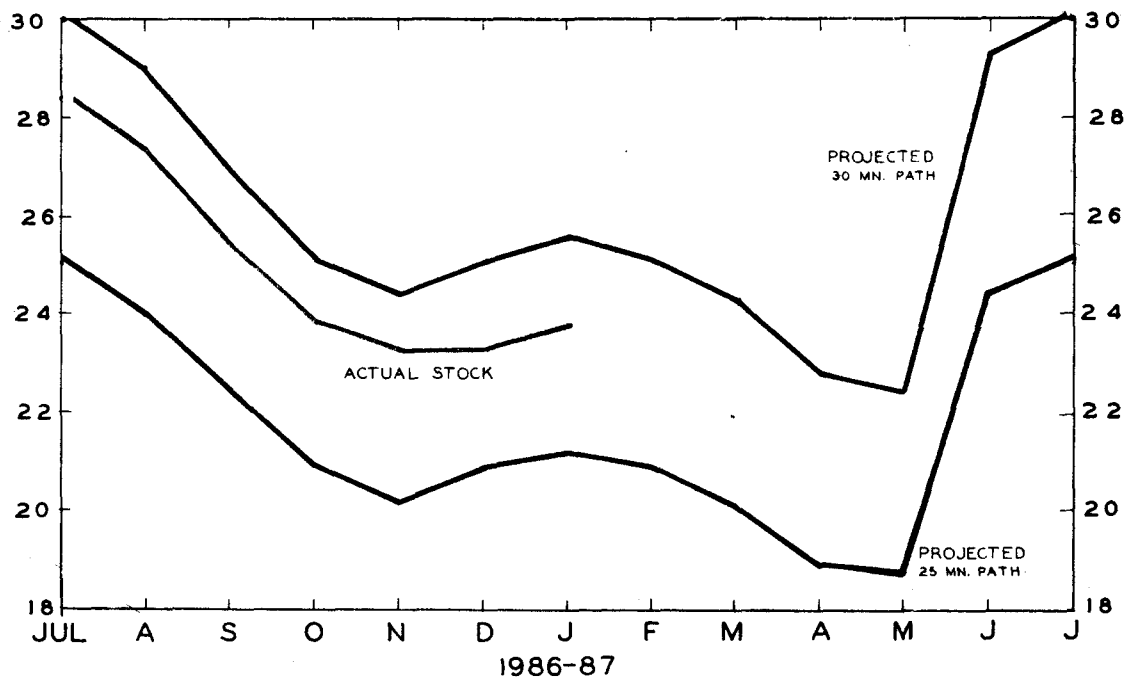
2.11 Following a comparatively good rainfall in the 1983 monsoon season, the kharif foodgrains production in 1983-84 reached a record level of 89.23 million tonnes. The next two years were marked by comparatively poor rainfall. Kharif foodgrains production declined to 84.52 million tonnes in 1984-85 and recovered only slightly (by 1.74 per cent) in 1985-86 due in part to higher levels of input application. Recovery in rabi foodgrains production in 1985-86 was fairly sharp—an increase of 5.67 per cent to 64.48 million tonnes—setting a new record for rabi foodgrains.

2.12 Kharif foodgrains output for 1985-86 was affected by the delayed onset of South-West monsoon

RECENT TRENDS IN FOODGRAINS PRODUCTION



TOTAL STOCKS OF FOODGRAINS WITH THE PUBLIC AGENCIES



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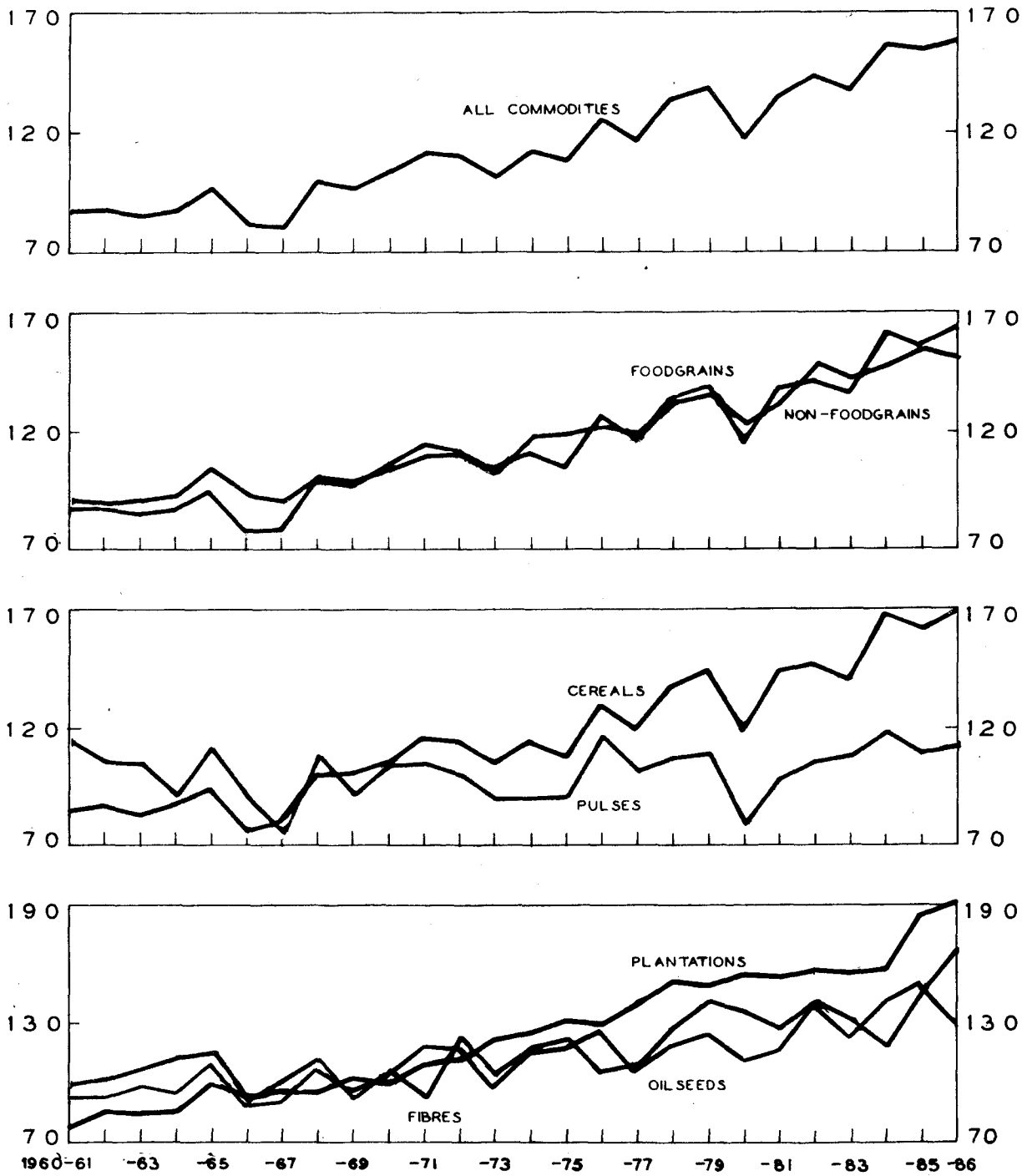
MGIP/PLU/302/1/FIN/86-87

INDEX OF AGRICULTURAL PRODUCTION

BASE :- TRIENNIUM ENDING 1969-70=100



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over the Central and Northern States. The delay was particularly pronounced in Gujarat and the monsoon during the season was erratic over many states. The seasonal rainfall was deficient in Karnataka, parts of Maharashtra, Gujarat and Rajasthan. As a result, the production of kharif coarse grains and oilseeds was affected. The performance of crops in irrigated areas and areas unaffected by drought conditions was good, whereas production of groundnut suffered a serious set back, particularly in Gujarat and Maharashtra. Production of coarse cereals declined by over 15 per cent to 26.47 million tonnes in 1985-86, as coarse grains are grown mostly under rainfed conditions.

TABLE 2.1

Agricultural Production

(Million Tonnes/Bales*)

Crop	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86
Rice	41.92	52.67	53.77	42.33	53.63	53.25	47.12	60.10	58.34	64.15
Wheat	29.01	31.75	35.51	31.83	36.31	37.45	42.79	45.48	44.07	46.89
Pulses	11.36	11.97	12.18	8.57	10.63	11.51	11.86	12.89	11.96	12.97
Kharif Foodgrains	66.53	77.72	78.08	63.25	77.65	79.38	69.90	89.23	84.52	85.99
Rabi Foodgrains	44.64	48.69	53.82	46.45	51.94	53.92	59.62	63.14	61.02	64.48
All Foodgrains	111.17	126.41	131.90	109.70	129.59	133.30	129.52	152.37	145.54	150.47
Groundnut	5.26	6.09	6.21	5.77	5.01	7.22	5.28	7.09	6.43	5.55
Rapeseed & Mustard	1.55	1.65	1.86	1.43	2.30	2.38	2.21	2.61	3.07	2.64
Oilseeds@	8.43	9.66	10.10	8.74	9.37	12.08	10.00	12.69	12.95	11.15
Sugarcane (cane)	158.01	176.96	151.66	128.83	154.25	186.36	189.51	174.08	170.32	171.68
Cotton (Lint.)*	5.84	7.24	7.96	7.65	7.01	7.88	7.58	6.39	8.51	8.61
Jute and Mesta*	7.10	7.15	8.33	7.96	8.16	8.37	7.17	7.72	7.79	12.73

*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.

2.13 Rice production reached an all-time record level of 64.2 million tonnes, which is 4.1 million tonnes (6.7 per cent) higher than the earlier peak of 60.1 million tonnes reached in 1983-84 and 5.8 million tonnes (10 per cent) higher than the level reached in 1984-85. This increase is fully due to increased yield rates, the area under rice during 1985-86 actually decreased by 0.6 per cent. All the major rice producing states, except Karnataka, Gujarat, West Bengal and Kerala recorded increases in production. The increase in rice production was particularly noteworthy in Andhra Pradesh, Tamilnadu and Uttar Pradesh where despite a fall in area or with no change in area, large increases in production were noticed. The increase in Andhra Pradesh was from 6.91 million tonnes to 7.66 million tonnes, in Tamilnadu from 5.36 million tonnes to 5.60 million tonnes and in Uttar Pradesh from 7.16 million tonnes to 8.20 million tonnes.

2.14 There was a record production of wheat during 1985-86 at 46.9 million tonnes as against the 1984-85 production level of 44.1 million tonnes and the previous record of 45.5 million tonnes achieved in 1983-84. The increase in production was recorded mainly in Rajasthan, Haryana, Punjab, Uttar Pradesh and Madhya Pradesh and attributable to higher yield rates during 1985-86 as compared to 1984-85. The major wheat growing states are Uttar Pradesh and Punjab. In Uttar Pradesh production increased by 0.81 million tonnes to 16.48 million tonnes and in Punjab it increased by as much as 0.82 million tonnes to 10.99 million tonnes. Gujarat, Maharashtra and West Bengal, however, recorded decreases in production.

2.15 Production of gram increased by 24.6 per cent during 1985-86 to 5.68 million tonnes. This increase was recorded mainly by the major producing states

of Rajasthan, Haryana, Madhya Pradesh and Uttar Pradesh and was partly due to the increase in area and partly due to higher yield rates. In Uttar Pradesh it was due to an increase of 0.16 million hectares in area compared to 1984-85. The decline in production was, however, noticed in Maharashtra, Gujarat and Karnataka in 1985-86.

2.16 Production of Tur (Arhar) declined by 6.1 per cent to 2.43 million tonnes during 1985-86 after reaching a record level of 2.59 million tonnes in 1984-85. Lower production was recorded mainly by Uttar Pradesh, Karnataka, Maharashtra, Gujarat and Rajasthan. The decrease in production in Uttar Pradesh was due to lower yield rates whereas in the other states, it was partly due to shrinkage in area and partly due to lower yield rates.

2.17 Production of pulses in 1985-86 estimated at 12.97 million tonnes was higher than the production levels achieved during the previous few years. The share of kharif pulses (other than tur) in this was 2.02 million tonnes and that of rabi pulses (other than gram) 2.84 million tonnes. The production of kharif pulses (other than Tur) declined by 7.5 per cent whereas rabi pulses (other than gram) increased by 7.7 per cent. Lower production of kharif pulses was reported mainly by Karnataka, Rajasthan and Gujarat, due to drought conditions during the growth period of the crops in these States. Maharashtra, Andhra Pradesh and Tamilnadu, however. reported some increases in production. The increase in the rabi pulses is reported mainly by Uttar Pradesh, West Bengal and Madhya Pradesh, and was due partly to increases in area and partly to higher yield rates.

2.18 There was a sharp decrease of 13.8 per cent in the production of groundnut during 1985-86 over the previous year. This was despite the increase of 2 per cent in the area under the crop. The decrease in production was reported mainly by Gujarat, Maharashtra and Rajasthan due to severe drought conditions in these states during 1985-86. Production in Gujarat declined from 1.57 million tonnes to 0.45 million tonnes, in Maharashtra from 0.73 million tonnes to 0.58 million tonnes and in Rajasthan from 0.17 million tonnes to 0.15 million tonnes. Increase in production was reported by Karnataka, Tamilnadu, Andhra Pradesh and Uttar Pradesh.

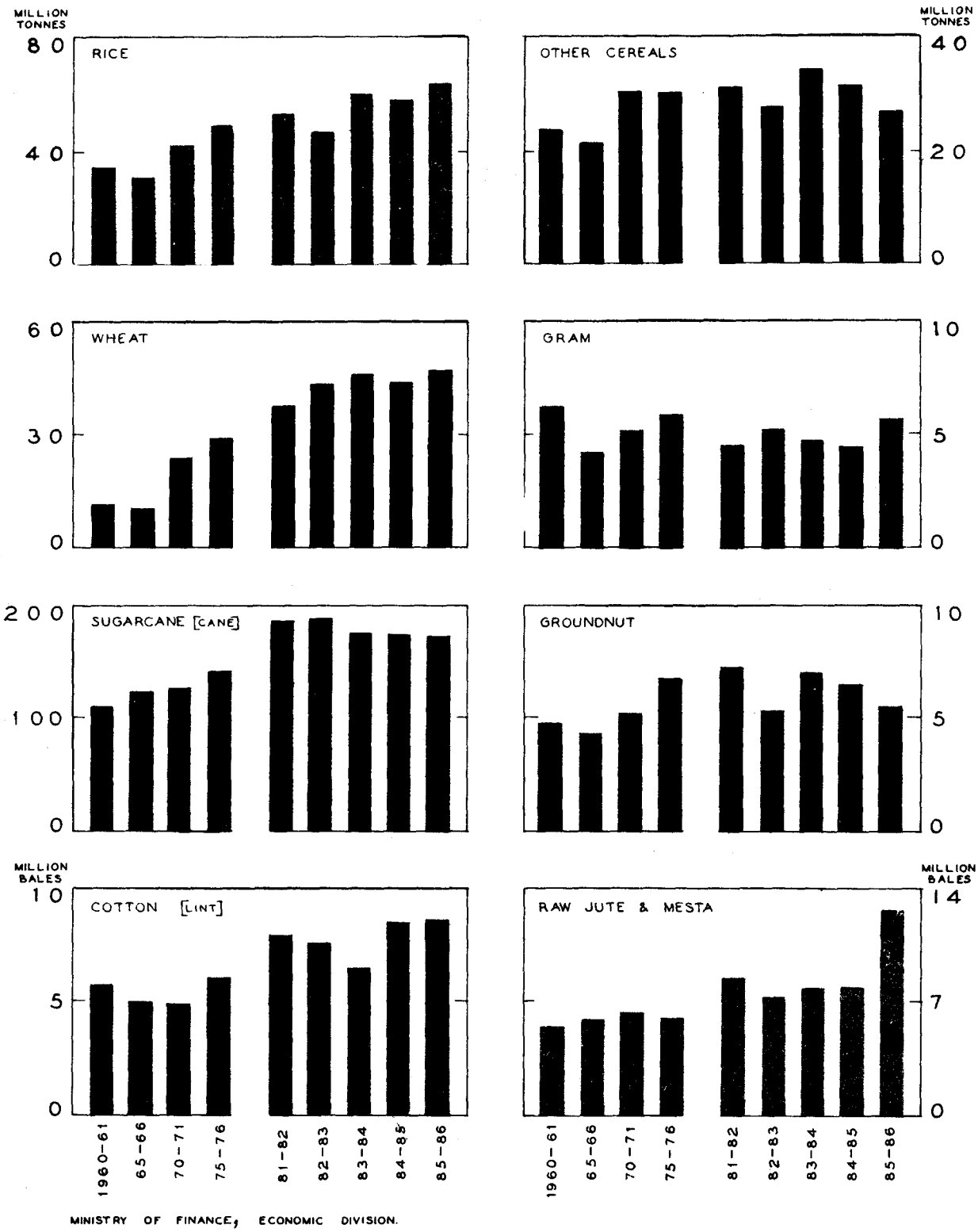
2.19 Production of rapeseed and mustard fell by 14 per cent to 2.64 million tonnes during 1985-86 after reaching a peak at 3.07 million tonnes in 1984-85. The decrease in production was largely due to the decline in yield rates, though the area under the crop also declined by about 5 per cent during the year. The decrease in production was reported by all the major rapeseed and mustard growing states except Orissa and Assam. The biggest decrease of 0.28 million tonnes to 0.59 million tonnes was registered in Rajasthan, which was mainly due to a decline in area under the crop from 1.08 million hectares to 0.81 million hectares.

2.20 Production of sugarcane showed a marginal improvement of 0.8 per cent over the previous year from 170.32 million tonnes in 1984-85 to 171.68 million tonnes in 1985-86. This was despite the shrinkage of area under the crop by 3.1 per cent to 2.86 million hectares. The increase in production was reported mainly by Tamilnadu, Uttar Pradesh, Bihar, West Bengal and Madhya Pradesh and is due to the favourable weather conditions prevalent at the sowing time. The states showing large increases were Tamilnadu and Uttar Pradesh, from 17.59 million tonnes to 22.17 million tonnes and from 70.89 million tonnes to 73.06 million tonnes respectively. Decline in production was reported from Maharashtra, Gujarat, Karnataka, Assam, Andhra Pradesh and Rajasthan.

2.21 The production of cotton reached a level of 8.61 million bales in 1985-86, exceeding the previous peak level of 8.51 million bales, achieved in the preceding season, 1984-85. The increase in production was recorded mainly in Maharashtra, Punjab, Haryana and Rajasthan. Maharashtra showing an increase of 29.2 per cent to 1.89 million bales, Punjab showing an increase of 13 per cent to 1.40 million bales, Haryana an increase of 22 per cent to 0.75 million bales. The increase in production, however, was offset to some extent by the decline reported in Karnataka, Andhra Pradesh, Gujarat and Tamilnadu.

2.22 The production of jute and mesta (taken together) in 1985-86 was estimated at a record level of 12.73 million bales showing an increase of 63.5 per cent over the 1984-85 level. The high market prices of fibre prevailing during 1984-85 led to an increase in area under the crop in 1985-86, while favourable weather conditions during the sowing/growth period of the crop led to increased yield rates. The production of jute was 10.95 million bales in 1985-86 as against 6.53 million bales in 1984-85. The production of mesta crop was higher at 1.78 million bales, compared with 1.26 million bales in 1984-85.

AGRICULTURAL PRODUCTION



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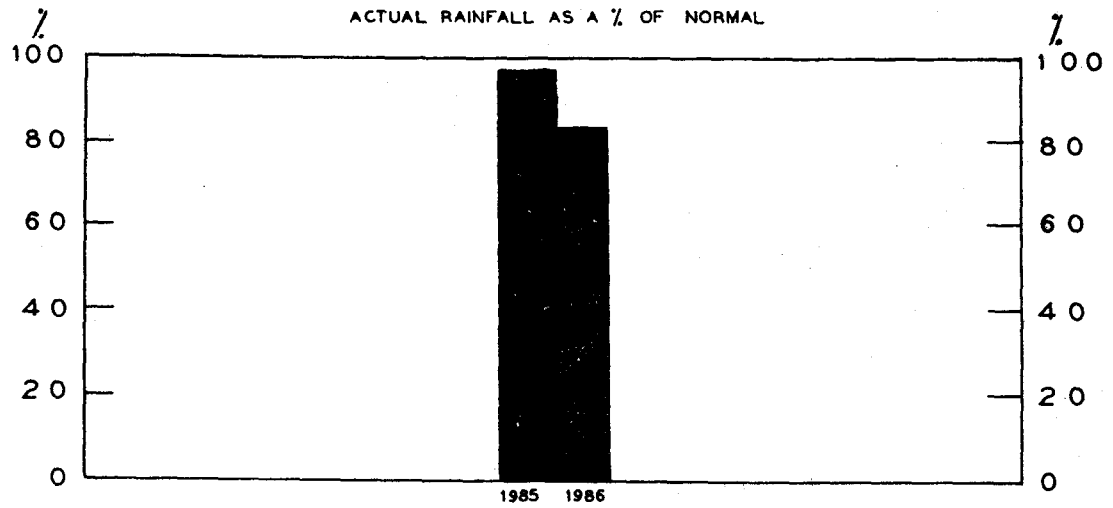
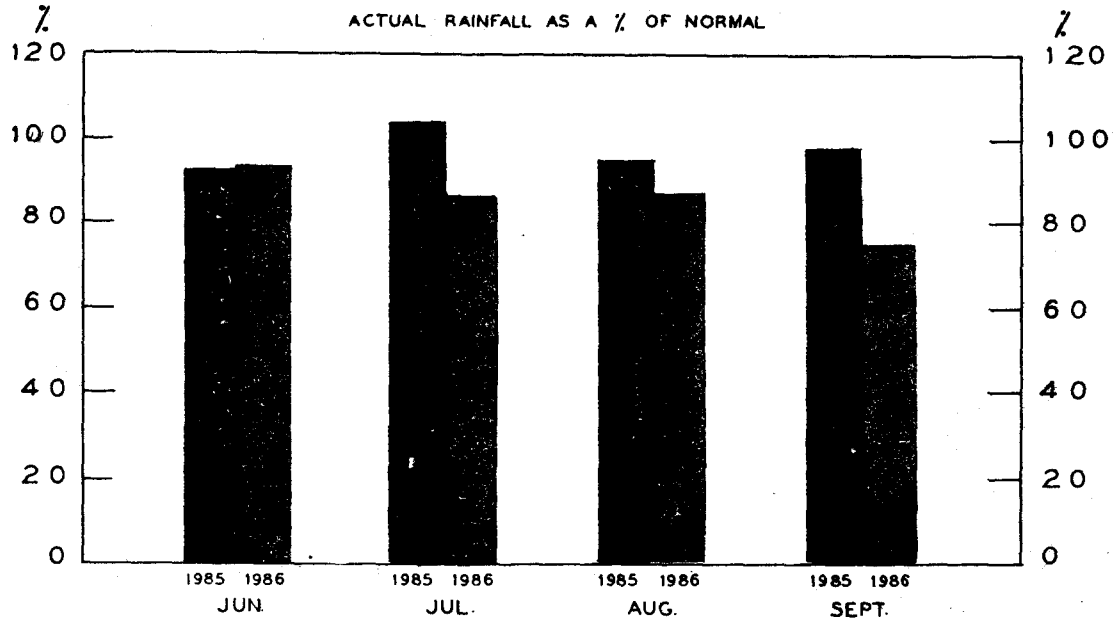
COMPARISON OF 1985 AND 1986 MONSOONS



MONTH-WISE COMPARISON OF '85 AND '86 RAIN



In order to monitor the impact of rainfall on production,an all-India weighted rainfall index was constructed at the Economic Division of the Ministry of Finance. In the construction of the all-India rainfall index, the following steps were carried out to derive the regional weighting pattern: (i) the districts contained in each of the 35 meteorological zones of the country were identified; (ii) the average area under kharif rice in each district for the triennium 1980-81 to 1982-83 was computed and aggregated to the meteorological zone leveal; (iii) the weights were computed for each meteorological zone by dividing the average area in each zone by the total area in all the zones; (iv) actual and normal rainfall data in each zone was extracted from the weekly weather reports issued by the Meteorological office (normal rainfall is calculated as the average rainfall in the zone over the last fifty years); (v) a weighted index of "actual" and "normal" rainfall was computed for each year incorporating all the meterological zones. The above graphs show the actual rainfall as a percentage of the normal rainfall computed in the manner described above.

MINISTRY OF FINANCE, ECONOMIC DIVISION

MGIP/PLU/302/1/FIN/86-87

2.23 Experience of recent years underlines the growing resilience of agricultural production. Foodgrains production has been maintained at a high level despite failure of monsoon during 1984-85 and 1985-86. According to present indications, foodgrains production in 1986-87 is expected to be close to the peak level of 152 million tonnes reached in 1983-84. This vindicates the strategy adopted for increasing production with emphasis on increased utilisation of irrigation potential and popularising use of modern inputs/ practices and high yielding varieties of seeds. The substantial addition to irrigation potential which has been maintained at more than 2 million hectares per year alongwith increased use of fertilisers have to an appreciable extent, insulated the agricultural economy from the vageries of monsoon.

Prospects for 1986-87

Monsoon Rainfall

2.24 The South west monsoon in 1986 was worse than the monsoon in the previous few years. This is indicated by calculating the All-India weighted average of rainfall for each meteorological sub-division, using the area under paddy in each sub-division as the weight. No doubt, a single All-India average for a vast and climatically highly diverse country may not be a wholly reliable indicator. However, a comparison of the actual average rainfall in each meteorological sub-division with its 'normal' average for the past few years also shows that the monsoon rainfall in 1986 was the poorest for the past few years :

TABLE 2.2

Monsoon Rainfall (June-Sept.)

Number of meteorological sub-divisions

	1981	1982	1983	1984	1985	1986
Excess/ Normal	28	23	32	27	26	21
Deficient/ Scanty	7	11	3	8	9	14
No data	0	1	0	0	0	0
Total	35	35	35	35	35	35

The deficient sub-divisions in 1986 cover Gujarat, West Rajasthan, Marathwada, Haryana, Plains of West Uttar Pradesh, Bihar, Kerala and the North-Eastern States.

2.25 The monsoon advanced over Kerala well in time on 4th June 1986. After a relative lull in the next two weeks of June, the monsoon made brisk progress and by end-June, it covered almost the entire country except parts of West Rajasthan. Fairly good rains occurred in most of the states, including those which were severely affected by drought during the previous year such as Gujarat, Maharashtra, Karnataka, Madhya Pradesh and parts of Rajasthan. But in the month of July, the rainfall activity was highly subdued. Fairly widespread rains occurred in the central and southern states in the first fortnight of August, but subsequently break monsoon conditions again set in, and August rains were insignificant in many parts of the country. Towards the end of September, however, there was revival of monsoon which broke the long dry spell prevailing in the North since the middle of August. Significantly deficient regions included Gujarat, West Rajasthan, Madhya Pradesh and parts of Maharashtra.

2.26 Production of kharif paddy has been affected because of delays in transplantation in Bihar, Assam and West Bengal, due to belated onset of monsoon, and floods in the coastal districts of Andhra Pradesh and in parts of Bihar and Kerala, as also because of an appreciable fall in the coverage under the crop in Tamilnadu due to non-availability of irrigation in the Cauvery Delta. Paddy production has also been adversely affected in Uttar Pradesh, Madhya Pradesh and Haryana. The coverage of area under pulses this year is estimated to be more than the 10.5 million hectares in kharif 1985. There are reports of crop shifts from cotton to kharif pulses in Maharashtra. The production of coarse grains is expected to be more than last year's level of 22 million tonnes.

2.27 The total production of kharif oilseeds in 1986-87 may be significantly better than 6.24 million tonnes of last kharif. Production of groundnut is expected to be better than last year's level of 4.09 million tonnes, although the crop has been adversely affected by a dry spell at the harvest stage in Gujarat, Tamilnadu, Karnataka and Andhra Pradesh. The area under soybean has continued to expand and the production this year is expected to be much better than last year.

2.28 Due to the below normal behaviour of the monsoon, a shortfall in 1986-87 kharif paddy production is apprehended. Coarse cereals, however, are likely to perform better, and may, somewhat offset the loss of output of kharif paddy. Prduction of kharif pulses and oilseeds may also increase. In the case of jute and cotton, production is expected to come down from the record levels achieved in the last year. A decline in production of these fibres may help stabilise the jute and cotton prices which had declined precipitiously, affecting the interests of the growers.

Post-Monsoon Rainfall

2.29 Twenty three Meteorological Sub-divisions have had excess/normal rains in the post-monsoon season (October to December) as compared to 28 in the corresponding period in 1985. In 1986 the temporal distribution of rainfall was, however, more evenly spaced, whereas in 1985 much of the rainfall had occurred in October. The States|Sub-divisions of Rajasthan, Gujarat, Maharashtra (excluding Vidarbha), Tamilnadu, Kerala and Rayalaseema, however, ended up with seasonal deficiencies in post-monsoon rainfall, Rabi/summer crops are not predominant in some of these areas. The inadequacy of rainfall in Rajasthan, Gujarat and Maharashtra would have affected rabi sowings in the rainfed areas. However, the rains which were received in the second fortnight of December, particularly in West Madhya Pradesh and parts of Maharashtra have been immensely beneficial to coarse cereals, pulses and oilseeds. The favourable turn in the monsoon continued during the month of January, 1987 and winter rains have been quite extensive. The live storage available in the major reservoirs has been, on the whole, better this year than in the preceding year. To that extent, there would be greater availability of water in the canals fed by major reservoirs.

2.30 A certain amount of resilience in agricultural production, despite a poor monsoon, may be partly attributable to continued emphasis on increases in the area under high yielding and improved seed varieties, and the promotion of the use of chemical fertilisers through its efficient movement and timely delivery. Additional irrigation coverage through the creation of fresh capacity and optimum utilisation of the facilities already available would, it is expected, help to some extent in countering the adverse impact of poor monsoon.

2.31 High priority has been accorded to the production of pulses and oilseeds particularly edible oilseeds. A new National Pulses Development Project is proposed to be launched to integrate the various on-going Centrally-sponsored pulses development programmes, so as to propagate crop-specific and location-specific technologies for achieving a sustained growth in pulses. Similarly, the National Oilseeds project is being recast so as to strengthen the key institutions responsible for providing various services such as inputs, extension, credit etc. to the farmers. Effective price support operations are very important for generating and sustaining the growth in oilseeds production. Support prices of oilseeds are being raised from year to year and the National Agricultural cooperative Marketing Federation has been entrusted with the responsibility at the field level to ensure that the growers actually receive at least the prescribed support prices.

Agricultural Inputs

Seeds

2.32 A major component of the strategy for the agricultural production is the expansion of area under HYV, which increased from 54.1 million hectares in 1984-85 to 55.2 million hectares in 1985-86. The pace of increase in the coverage under HYV seeds has slowed down since 1983-84 in the wake of unfavourable monsoon conditions. Most of the increase in area under HYV in 1985-86 occurred in paddy and wheat; HYV area under jowar and bajra declined during 1984-85 as well as 1985-86, following severe drought in the areas where these two crops are chiefly grown. The percentage coverage under wheat at over 85 per cent is close to the maximum. Other cereal crops, including paddy, are still way behind and this points to the vast scope for increasing production through the expansion of HYV coverage. The target of HYV coverage for 1986-87 is 60.6 million hectares.

TABLE 2.3

Area under HYV (*million hectares*)

Crop	1982-83	1983-84	1984-85	1985-86	1986-87*
Paddy	18.8 (49.1)	21.7 (52.6)	22.8 (55.3)	23.8 (58.2)	25.8
Wheat	17.8 (75.5)	19.4 (78.6)	19.1 (80.9)	19.7 (85.3)	20.7
Jowar	4.4 (26.9)	5.3 (32.3)	5.1 (32.1)	4.9 (31.0)	5.8
Bajra	4.7 (43.0)	5.4 (45.6)	5.2 (48.6)	4.6 (43.0)	5.9
Maize	1.7 (29.7)	1.9 (32.4)	2.0 (34.5)	2.2 (37.3)	2.4
Total	47.5	53.7	54.1	55.2	60.6

*Targets.
Figures in parenthesis give the percentage of the HYV area to the total area under the crop.

2.33 There was a revival in the rate of growth in the distribution of certified seeds during 1985-86, after two years of slackened growth.

TABLE 2.4

Distribution of certified/quality seeds

Year	Lakh quintals	Percentage increase over the preceding year
1980-81	25.01	
1981-82	29.81	19.2
1982-83	42.06	41.1
1983-84	44.97	6.9
1984-85	48.46	7.8
1985-86 (likely achievement)	55.01	13.5

2.34 During 1985-86, one high yielding variety of rice was released at the national level and 23 varieties were notified under the seeds Act. Coverage under these varieties is expected to widen in the ensuing kharif season.

Fertilisers

2.35 Expansion of fertiliser application is an important plank in the strategy for increasing agricultural production. Total off-take of fertilisers increased in 1985-86 to 87.4 lakh tonnes (nutrients). This marks an increase of 6.4 per cent over the preceding year. The current national average consumption of over 50 kgs per hectare of gross cropped area, though low, is not insignificant.

TABLE 2.5

Offtake of Fertilizers

(Lakh tonnes of nutrients)

Year	Nitro-genous	Phos-phastic	Potassic	Total NPK	Percantage increase*
1979-80	35.0	11.5	6.1	52.6	2.7
1980-81	36.8	12.1	6.2	55.2	4.9
1981-82	40.7	13.2	6.7	60.6	9.9
1982-83	42.2	14.4	7.3	63.9	5.3
1983-84	52.1	17.3	7.7	77.1	20.7
1984-85	54.9	18.8	8.4	82.1	6.5
1985-86	58.2	20.7	8.5	87.4	6.4
1986-87 (target)	63.0	23.0	9.0	95.0	8.7

*In total consumption over the preceding year.

2.36 While the increase in fertiliser consumption over the years has been impressive, considerable ground has yet to be covered in terms of the promotion of balanced use of fertiliser. Also, there are very wide variations in the region-wise/crop-wise use of chemical fertilisers. A number of states/regions are lagging behind considerably in the usage of chemical fertilisers. Consumption in Punjab was three times the national average, in Tamil Nadu it was twice the average. Consumption in the Central belt comprising Rajasthan, Madhya Pradesh and Orissa has been lagging far behind. In general, areas with reasonably dependable irrigation facilities or assured rainfall have done comparatively well in the adoption of chemical fertilisers. Only about one-third of the cropped area is estimated to be receiving the benefit of fertiliser application.

2.37 Efforts have to be made for organising the supplies necessary to meet the rising demand for fertilisers. The fertiliser industry, though of recent origin, has been one of the fastest growing industries of the country. In the absence of any known domestic source of potash, the entire requirements are to be met through imports. In the case of nitrogenous and phosphatic fertilisers the domestic industry has achieved an installed capacity of 8.18 million tonnes by the end of 1985-86 and the production in the year totalled 5.76 million tonnes. Nevertheless, the domestic production is still considerably below the demand and needs to be stepped up as quickly as feasible. Meanwhile, the gap has to be bridged through imports. Fifteen fertiliser plants are at present, under different stages of construction. Of these, six will be based on Bombay High associated gas, which will be supplied to the proposed fertiliser units through the Hazira-Bajaipu-Jagdishpur (HBJ) pipeline.

TABLE 2.6

Fertilizers : Production, imports and subsidies

Year	Production (000 Tonnes)	Imports (000 Tonnes)	Subsidies (Rs. crores) on imported fertilizers	on domestic production	Total
1979-80	2983	2005	282	321	603
1980-81	3005	2759	335	170	505
1981-82	4093	2041	100	275	375
1982-83	4404	1132	55	550	605
1983-84	4533	1355	142	900	1042
1984-85	5181	3624	727	1200	1927
1985-86	5756	3399	324	1600	1924
1986-87*	6950	2500	233	1700	1933

*Anticipated

2.38 With a considerable increase in domestic production from 30.1 lakh tonnes in 1980-81 to 40.9 lakh tonnes in 1981-82, it was possible to reduce the imports from 27.6 lakh tonnes to 20.4 lakh tonnes. With a further increase in domestic production and a slow-down in the pace of growth in fertiliser demand in 1982-83, fertiliser imports were reduced drastically to 11.3 lakh tonnes. Though the domestic production did not rise appreciably in 1983-84, imports were kept low at 13.6 lakh tonnes. In the same year due to favourable weather conditions and reductions in fertiliser prices, the domestic offtake of fertilisers increased by 20.7 per cent in 1983-84, compared to a rise of only 5.3 per cent in 1982-83. As a result, stocks were run down. Determined to ensure comfortable supplies to fully meet the requirements, the authorities stepped up the imports to the all-time high of 36.2 lakh tonnes in 1984-85, and the domestic production in that year also increased by 6.5 lakh tonnes. Domestic production increased by another 5.8 lakh tonnes in 1985-86 and the imports, too, were kept high at 34.0 lakh tonnes. Production in 1986-87 is expected to attain a further increase of 12 lakh tonnes over 1985-86. The increase in offtake in the years 1984-85 and 1985-86 was lower than expected owing to rather poor weather and monsoon conditions. The continued high level of imports in the face of a considerable step-up in domestic production in these two years created an excess supply situation and stocks have been accumulating. The role envisaged for imports was to bridge the supply gap. Now that the domestic fertiliser industry has come of age, it has to gear itself to change over from the regime of fertiliser allotment and distribution to that of sales targeting and marketing. The industry's sales promotion drive is likely to acquire a greater urgency if the supplies are kept somewhat ahead of the demand. By and large, the industry rose to the occasion when the market supplies out-stripped demand and a number of innovative sales promotion measures were used.

Irrigation

2.39 Additional irrigation 'potential' of 2.2 million hectares was created during 1985-86. Most of the addition has come mainly from minor irrigation projects, covering about 1.7 million hectares. A cumulative potential of about 69.8 million hectares was created by the end of 1985-86. The utilisation of potential has, however, not kept pace with its creation, as the command area development lagged behind the completion of the main works of the projects. Delays in construction of field channels and drains, excessive withdrawal of water by the upstream beneficiaries, adoption of cropping patterns at variance with those envisaged in the project reports, and excessive seepage losses have also contributed to the sub-optimum utilisation of the created potential. The gap between the irrigation potential created and utilised has increased from 6.9 million hectares in 1984-85 to 7.5 million hectares in 1985-86. The targets for 1986-87 indicate that the gap may increase to over 8 million hectares in that year. The Table below shows the progress of the overall irrigation potential and its utilisation in the past few years.

TABLE 2.7

Development of Irrigation Potential and its Utilisation

(Cumulative Coverage)

(million hectares)

Year	Major & Medium Scheme		Minor Scheme		All Schemes	
	Potential	Utilisation	Potential	Utilisation	Potential	Utilisation
1979-80	26.6	22.6	30.0	30.0	56.6	52.6
1980-81	27.3	22.7	31.4	31.4	58.7	54.1
1981-82	28.2	23.2	32.8	32.8	61.0	56.0
1982-83	29.1	24.0	34.2	34.2	63.3	58.1
1983-84	30.0	24.6	35.6	34.0	65.6	58.6
1984-85	30.01	25.33	37.52	35.25	67.53	60.58
1985-86*	30.57	25.84	39.18	36.43	69.75	62.27
1986-87†	31.26	26.42	40.91	37.69	72.17	64.11
Ultimate potential	58.5		55.0		113.5	

*anticipated †Target

2.40 The increasing trend of unutilized irrigation potential is a cause for serious concern. The problem is more severe in the case of major/medium schemes involving storage and the utilisation of surface water, and comparatively less severe in the case of minor schemes involving utilisation of underground water resources. The ultimate potential for major/medium schemes is estimated to be 58.5 million hectares out of which a total potential of 30.6 million hectares has already been created by the end of 1985-86. The total additional potential created in this sector during the Sixth Plan was 3.4 million hectares while the unutilised potential at the end of the Sixth Plan was 4.7 million hectares.

2.41 The Command Area Development Programme which was first implemented in 1974-75 to tackle the problem of non-utilisation of irrigation potential created in the major irrigation projects. In 1985-86, the allocation for the CAD programme was Rs. 295 crores while the anticipated expenditure is only Rs. 274 crores. For 1986-87, it is proposed to spend Rs. 2143 crores on major/medium irrigation projects, while the allocation for CAD programme is Rs. 307 crores. The allocations for 1986-87 show an increase of 14.7 per cent in the case of major/medium schemes and of 12.0 per cent in the case of CAD programmes over the revised estimates of 1985-86. There is still an effort to create fresh potential despite the fact that the gap between the potential created and utilised has tended to increase rather than decrease.

2.42 Inordinate delays in the completion of projects and the severe cost escalations in the major/medium projects probably indicate that new projects have been taken up without adequate organisational planning and the assurance of the funds required for timely completion. Greater emphasis on improving the utilisation of created potential is clearly needed. The problems of water logging and salinisation associated with the huge surface water scheme also need to be fully recognised. Account has to be taken of the additional investments required for providing drainage in areas severely threatened by water-logging and salinisation, lest such areas become unfit for cultivation. For instance, there are reports of rapidly rising water salinity in the surface irrigated areas of Haryana, Punjab and Northern Rajasthan.

2.43 Minor irrigation schemes mostly exploit ground water potential. They require no investment on water storage or transportation over long distances. Irrigation water is available on a more timely basis unlike in the case of major/medium projects where the beneficiaries at the sources of canal tend to overdraw, leaving insufficient water to the tail-end beneficiaries. Moreover land levelling and construction of field channels required for ground water irrigation can be undertaken by the farmers with their own resources. The problems of water-logging and evaporation, usually associated with surface water irrigation, are considerably reduced in the case of minor irrigation projects. However, over-exploitation of ground water may cause severe problems. State ground water organisations, perhaps, need to be strengthened to enable them to take up projects to ensure maximum recharge of ground water and prevent any avoidable run-off in water sheds.

Plant Protection

2.44 The consumption of plant protection materials was below expectations during the Sixth Plan. The original plan target of 80,000 tonnes of technical grade material was subsequently scaled down to 75,000 tonnes. Actual consumption in 1984-85 was only 56,000 tonnes.

2.45 The concept of integrated pest management advocates need-based use of pesticides, in addition to taking recourse to other pest control measures such as resistant verieties of seeds biological control, and mechanical control. The Seventh Plan reflected this approach as the target of consumption of technical grade material to be achieved by 1989-90 was set at 75,000 tonnes. The target for 1985-86 was 66,000 tonnes, compared to the estimated consumption of 56,000 tonnes in 1984-85. The estimated consumption for 1985-86 is 52,000 tonnes, and the crop year 1985-86 was generally free from major outbreak of plant diseases/insect pests, except for the incidence of 'pyrilla' on the sugarcane crop in Uttar Pradesh, Punjab and Haryana; of 'white fly' on the cotton crop in Andhra Pradesh and of 'white rust' on the mustard crop in Rajasthan, Uttar Pradesh and Haryana. Amongst these, Pyrilla was controlled by resorting to biological control and a very small amount of insecticides was used.

Credit

2.46 In the sphere of agricultural credit, apart from increased flow, the major policy objectives is its progressive institutionalisation under a multi-agency system consisting of cooperatives, commercial banks and regional rural banks. The disbursements of agricultural credit from the institutional agencies increased from Rs. 5,556 crores in 1984-85 to Rs. 7,043 crores in 1985-86. For the year 1986-87, a target of Rs. 8,835 crores has been Projected.

2.47 The major problem faced by the lending institutions in the agriculture sector is the unsatisfactory level of overdues. Overdues have been persisting around 45 per cent during the last 3-4 years. At the end of June, 1985, the percentage of overdues to demand at the Primary Agricultural Credit Societies (PACS) level was around 40 per cent, while at the level of Primary Land Development Banks (PLDBs) branches it was 42 per cent. In the case of commercial banks, overdues percentage was 48 in 1984. With the exception of a few states, like Haryana, Kerala and Punjab, the recovery performance in other states is far from satisfactory. From 1-7-86, National Bank for Agriculture and Rural Development has further strengthened its efforts of overdues, and out of 1851 PLDBSs less than one-third are estimated to be having overdues of less than 25 per cent and thus eligible for unrestricted NABARD lending. The State Governments have also been advised to draw up and implement time-bound programmes for improvement of recoveries and mount special recovery drives during the harvesting season and take strong action against prominent and wilful defaulters. The pilot project for strengthening the credit delivery system launched in three selected districts in 1984 has shown positive results in the matter of improvement in recovery of dues. Improvement in recovery is of paramount importance, as on recovery depends the recycling of funds by the cooperatives and also further credit expansion.

Crop Insurance

2.48 The Comprehensive Crop Insurance Scheme was introduced in the country from Kharif 1985 season. It is being implemented by the General Insurance Corporation of India (GIC) in collaboration with the State Governments as co-insurer in the ratio 2:1. The scheme aims at providing a measure of financial support to farmers in the event of a crop failure and restore their credit eligibility for the next crop season. For the present, the scheme covers losses as a result of drought or floods caused to the cultivators of cereals, pulses and oilseeds. All the farmers availing of crop loans from credit institutions are covered under the scheme. Insurance service charges (i.e. premium) is 2 per cent of the sum insured for the cereals and 1 per cent for pulses and oilseeds. The amount of premium is an additionality to the crop loan. Fifty per cent of the premium payable by the small and marginal farmers is subsidised jointly by the Central and the State Governments on a 50:50 basis.

The progress of the scheme so far is as under :

Table 2.8

Crop Insurance Scheme

	Kharif 1985-86	Rabi 1985-86	Kharif 1986-87
No. of States+Union Territories	11+2	14+2	16+4
Area covered (lakh hect.)	43.7	22.3	64.1
No. of farmers covered (Lakhs)	23.1	13.7	32.5
Sum insured (Rs. crores)	542	239	717
Premium collected (Rs. crores)	9.42	4.42	12.55
Claims paid/payable	81.86	2.96	..

Cropping Pattern

2.49 Fluctuations in production have disturbed the supply-demand balance of certain major agricultural commodities like pulses, oilseeds, cereals, sugarcane etc. Current stocks of foodgrains, particularly wheat, are excessive in relation to its demand, even though the issue prices at fair prices shops are highly subsidised, and substantial quantities are distributed to special target groups of economically weaker communities, with further subsidisation of prices. On the other hand, not enough oilseeds and sugar are produced within the country, entailing heavy imports at substantial cost of foreign exchange. Import of pulses is placed under OGL as the domestic production falls considerably short of requirements. This underlines the importance of rationalising the cropping pattern. Marked changes have occurred in the cropping patterns since late Sixties, following the popularisation of high yielding varieties, increased availability of irrigation facilities and the expansion of the usage of chemicals (fertilisers, pesticides, weedicides etc.). Area under wheat has witnessed the highest compound growth rate of area of 2.67 per cent per annum, as against the compound growth rate of total cropped area at 0.60 per cent per annum during the period 1967-68 to 1983-84. The growth rate of area under rice was 0.64 per cent per annum, which was only marginally higher than the growth rate of total cropped area. Growth rates of area under jowar, bajra, maize, barley and small millets were negative during this period. Wherever there has been extension of irrigation facilities, farmers have shown preference for crops like wheat or paddy for which high yielding varieties are available and therefore, their cultivation has become more remunerative Among non-foodgrain crops, sugarcane, potato, rapeseed and mustard have shown a high rate of growth of area. Growth of area under groundnut, cotton, jute and mesta has been positive but relatively lower than the rate of growth of area under foodgrains.

2.50 The changes in cropping pattern reflect, broadly, the changes in the relative profit expectations of the alternative crops at different points of time. Accordingly, the cropping pattern changes help improve the economic well-being of the producers. The resultant changes in crop production, however, may not always be in the desired direction. In many cases, the production changes are in line with the requirements of domestic and export demand; in other cases, they may lead to supply-demand imbalances or even accentuate the existing imbalances. The high unit cost of production discourages the export of the surplus production. As a result, even small surpluses in domestic production (relative to domestic demand) tend to build up inventories which, over the years, pose serious problems of storage and financing. On the other hand, the constraints of foreign exchange and low purchasing power of the domestic consumers cause major difficulties in meeting the requirements of the under-produced crops.

2.51 The desired changes in the cropping patterns are to be brought about through a strategy that ensures that the overall economic well-being of the producers is not adversely affected in the process. The relative price parities between different crops need to be changed in favour of the crops where shortages have emerged. However, changes in the relative price regime are not enough. It is not the unit sale price but the net revenue which the grower expects from cultivation of a crop that determines his cropping decisions. The quantum of price increase required for an existing under-produced crop to equalise the grower's net revenue with that of the competing over-produced crop may be too high to be acceptable to the consumer. Disappearance of the stocks of the currently over-produced crops may result in higher market prices of such crops, and to that extent still higher increases may be required in the prices of under-produced crops for bringing about the price-induced changes in the cropping pattern. The strategy of changes in the relative prices has to be supported through appropriate action in the fields of agricultural research and extension, appropriate changes in the sphere of input supplies and pricing, and marketing facilities. The comparative risk factor also influences the cropping decision. Pulses and oilseeds, which are under-produced crops in India today, are largely grown in low rainfall, dry farming regions, characterised by large weather induced changes in yield rates from year to year. The grower seeks to reduce the risks by minimising investments on inputs in the cultivation of these crops, leading to their low productivity. To the extent protective irrigation can be provided to the low rainfall regions, it will help reduce the element of risk and uncertainty, and induce the growers to undertake investment for raising productivity. The recently introduced crop insurance scheme also should help. The premia and compensation rates under the scheme could perhaps be so evolved as to bring about a more favourable regime for currently under-produced crops.

Foodgrains

2.52 The total area under foodgrains in 1950-51 was 97.3 million hectares. This increased by 18.7

per cent to 115.6 million hectares in 1960-61. The increase in area in 1970-71 was 7.6 per cent over 1960-61. In the next decade, 1970-71 to 1980-81, foodgrains area gained only 1.9 per cent. The total area under foodgrains in 1985-86 at 127.1 million hectares is only 0.3 per cent higher compared to the area in 1980-81. Apparently, the total area under foodgrains has now stabilised. However, the crop-wise shifts in area within the foodgrains group are still continuing. Area under coarse cereals which increased by 19.2 per cent between 1950-51 and 1960-61 increased by only 2.3 per cent in 1970-71. The total area under coarse cereals in 1980-81 was 9.1 per cent at 41.8 million hectares compared to 45.9 million hectares in 1970-71. This decline in acreage under coarse cereals has continued. In 1985-86, five years after 1980-81, the coarse cereals lost another 6 per cent area. Wheat area increased by 32.7 per cent in the decade ending 1960-61 and gained another 41.1 per cent in the next decade ending 1970-71. The pace of accretion to wheat area somewhat slowed down to 22.1 per cent in 1980-81 over 1970-71. Wheat acreage has tended to stabilise after that and the increase in area in five years (1985-86 over 1980-81) was only 3.6 per cent. After recording an increase of 24 per cent in 1960-61 over 1950-51, the total area under pulses declined by 4.3 per cent in 1970-71 over 1960-61. A further decline in area under pulses was, however, arrested as the loss in area in 1980-81 over 1970-71 was only 0.3 per cent. In the recent years, pulses crops have attracted additional acreage, due to the expansion of double and multiple cropping. At 23.8 million hectares in 1985-86, the total area under pulses shows an increase of 6.1 per cent over that in 1980-81.

2.53 Foodgrains command 73—75 per cent of the gross cropped area in the country. The share has remained more or less unchanged since 1950-51. However, as the total area under foodgrains has tended to stabilise after 1980-81, and the total gross cropped area has continued to increase due to the expansion of double and multiple cropping, the share of foodgrains in the total area under crops may show some decline hereafter. The relative share of rice in the total area under foodgrains has also remained more or less unaltered at 30—32 per cent during 1950-51 to 1980-81. But the share of wheat in the total area under foodgrains increased from 10 per cent in 1950-51 to 18.2 per cent in 1985-86. On the other hand, the area under coarse cereals which was around 39 per cent of the total area under foodgrains in 1950-51 and 1960-61 declined thereafter, and reached 30.9 per cent in 1985-86.

TABLE 2.9

Percentage distribution of area under foodgrains

Crop/Group of Crops	1950-51	1960-61	1970-71	1980-81	1985-86
Rice . . .	31.7	29.5	30.2	31.7	32.2
Wheat . .	10.2	11.2	14.7	17.6	18.2
Coarse cereals .	38.7	38.9	37.0	33.0	30.9
All cereals .	80.4	79.6	81.9	82.3	81.3
All pulses .	19.6	20.4	18.1	17.7	18.7
All Foodgrains .	100.0	100.0	100.0	100.0	100.0

2.54 Total production of foodgrains nearly tripled from 50.8 million tonnes in 1950-51 to 150.5 million tonnes in 1985-86. In 1960-61, the production was 61.4 per cent over 1950-51. In 1970-71, it was 32.2 per cent higher than that in 1960-61. The pace of increase was comparatively low in the next decade in 1980-81; production at 129.6 million tonnes was higher by only 19.5 per cent than that in 1970-71. But the pace of increase in foodgrains production has accelerated in recent years, as the production in 1985-86 marks an increase of 16.1 per cent in a period of five years.

2.55 The share of rice in the total production of foodgrains has remained virtually unaltered, around 40—42 per cent. The share of coarse cereals and pulses, have however, declined from 30.3 per cent of the total foodgrains production in 1950-51 to 22.4 per cent in 1980-81 in the case of coarse cereals; and from 16.5 per cent to 8.2 per cent in the case of pulses. In recent years (1985-86 over 1980-81) the declining trend of the share of pulses is the total foodgrains production has reversed but in the case of coarse cereals, the pace of decline has further accelerated. The contribution of wheat in the total production of foodgrains has continued to increase.

TABLE 2.10

Percentage contribution of crops in the total foodgrains production

Crop/Group of Crops	1950-51	1960-61	1970-71	1980-81	1985-86
Rice . . .	40.5	42.2	38.9	41.4	42.6
Wheat . .	12.7	13.4	22.1	28.0	31.2
Coarse cereals .	30.3	28.9	28.2	22.4	17.6
All cereals .	83.5	84.5	89.1	91.8	91.4
All pulses .	16.5	15.5	10.9	8.2	8.6
All foodgrains	100.0	100.0	100.0	100.0	100.0

Oilseeds

2.56 The total production of nine major oilseeds (groundnut, rapeseed and mustard, sesamum, nigerseed, safflower, sunflower, soybean, linseed and castorseed) exceeded 10 million tonne mark for the first time in 1975-76 when the production reached 10.6 million tonnes. This level could not be maintained and the production fluctuated between 8-10 million tonnes during the next five years. Thereafter, a new peak was achieved in 1981-82 at 12.1 million tonnes. Since then oilseed production has fluctuated between 10 and 13 million tonnes per annum.

2.57 Various oilseeds development projects initiated in the past few years seem to be showing results. The total area under these nine cultivated oilseeds increased from the earlier peak of 17.7 million hectares in 1978-79 to 18.9 million hectares in 1981-82 and about the same level has been maintained in the five years since then, except for a loss of about a million hectares in 1982-83 due to very adverse weather conditions at sowing time. What is more reassuring, there has been a more than proportionate addition to irrigated area under oilseeds. The irrigated area formed 10.9 per cent of the total area under oilseeds in 1978-79, and this proportion increased continuously in the subsequent years to reach 16.7 per cent in 1983-84.

TABLE 2.11

All-India Area, Production and Yield of Nine Oilseeds

Year	Area (ml. hectares)	Production (ml. tonnes)	Yield (Kgs./ hect.)	Percentage coverage under irrigation
1978-79 . .	17.71	10.10	570	10.9
1979-80 . .	16.94	8.74	516	12.5
1980-81 . .	17.60	9.37	532	14.3
1981-82 . .	18.91	12.08	639	15.2
1982-83 . .	17.76	10.00	563	15.3
1983-84 . .	18.69	12.69	679	16.7
1984-85 . .	18.92	12.95	684	
1985-86 . .	18.87	11.15	591	

2.58 The upward trend in production and yield rates received a setback in 1985-86 when the production declined by 13.8 per cent and the yield by a similar margin of 13.6 per cent. Production of groundnuts in Gujarat declined by over 1.12 million tonnes, from 1.57 million tonnes in 1984-85 to 0.45 million tonnes in 1985-86. The decline in 1985-86 underlines the high degree of instability which still characterises the oilseeds economy.

2.59 An interesting development in the field of oilseeds cultivation has been the added importance acquired by the rabi crops over that of kharif, not so much in terms of area as in terms of production and yield rates. In 1970-71 kharif crops provided 72.8 per cent of the total oilseeds production; their percentage share declined to 56 in 1985-86. Similarly, the yield per hectare of kharif oilseeds at 649 Kgs. in 1970-71 was 44.5 per cent higher than that of rabi oilseeds. In 1985-86, the yield per hectare of rabi oilseeds was only 21.9 per cent higher than that of kharif oilseeds.

TABLE 2.12

Seasonwise area, production and yield of oilseeds

	1970-71	1975-76	1980-81	1985-86
Area (ml. hectares)				
Kharif . .	10.80	10.25	10.17	11.47
	(65.0)	(60.6)	(57.8)	(60.8)
Rabi . .	5.84	6.67	7.43	7.40
	(35.0)	(39.4)	(42.2)	(39.2)
Total . .	16.64	16.92	17.60	18.87
Production (ml. tonnes)				
Kharif . .	7.01	7.12	5.00	6.24
	(72.8)	(67.1)	(53.4)	(56.0)
Rabi . .	2.62	3.49	4.37	4.91
	(27.2)	(32.9)	(46.6)	(44.0)
Total . .	9.63	10.61	9.37	11.15
Yield per hectare (Kgs.)				
Kharif . .	649	695	492	545
Rabi . .	449	522	588	663
Total . .	579	627	532	591

(Figures in brackets indicate the percentage to total)

2.60 Though a number of oilseeds development projects have been in operation, the efforts so far have, clearly, been inadequate in relation to the very large dimensions of the task. The recently set up oilseeds Technology Mission is expected to provide further stimulous in this direction. Since 83 per cent of the oilseeds area is still cultivated under rain-fed conditions, a major breakthrough in oilseeds production can be achieved primarily through field level improvement in dry-farming techniques. Efforts have also been made to exploit non-traditional sources of vegetable oils, including oilseeds of tree/forest origin. Special incentives have been given to promote extraction of edible grade oil from rice bran and the cultivation of larger quantities of cottonseed and minor oilseeds for oil extraction. Despite these efforts, however,

heavy imports of vegetable oils have had to be arranged to meet domestic requirements.

Imports of edible oils by STC

Oil year (Nov.—Oct.)	Quantity (Lakh tonnes)	Value (Rs. crores)
1978-79	8.21	480
1979-80	11.49	617
1980-81	10.74	516
1981-82	9.95	450
1982-83	11.50	507
1983-84	16.34	1319
1984-85	13.68	1123
1985-86	11.79	489

Sugarcane

2.61 The compound annual growth rate of the area under sugarcane for a period of 35 years, 1949-50 to 1984-85, was 1.98 per cent. Around 80 per cent of the total area under sugarcane is covered under irrigation; and the intensity of fertiliser application to sugarcane crop is amongst the highest for any cultivated crop. Considering such an intensive use of inputs, the growth rate of yield per hectare at 1.13 per cent per annum over the period 1949-50 to 1984-85 is rather modest. In the tropical region of Maharashtra (and also Andhra Pradesh and Tamilnadu), the duration of the sugarcane crop is 16—18 months while in the sub-tropical region like Uttar Pradesh (and also Bihar, Punjab and Haryana), the crop duration is much shorter, being 10-11 months. Inputs like chemical fertilisers and irrigation are far more intensively applied to the sugarcane crop grown in the tropical region than that in the sub-tropical region. In Maharashtra, in 1982-83, for instance, the fertiliser application was 459 Kgs. per hectare compared to only 71 Kgs. in Uttar Pradesh; the average number of irrigations of the sugarcane crop in Maharashtra in that year was 36 compared to 7 in Uttar Pradesh. The sucrose-content is, however, higher in the sugarcane grown in Maharashtra than that in Uttar Pradesh.

TABLE 2.14

Comparative economics of sugarcane in Maharashtra and Uttar Pradesh 1982-83

	Maharashtra	Uttar Pradesh
(i) Time (months)	18	10
(ii) Fertilizers (kgs. per hectare)	459	71
(iii) Irrigation (Nos)	36	7
Productivity		
(i) Yield per hectare (quintals)	96.3	45.7
(ii) Yield per hectare per unit time of 12 months (quintals)	64.2	54.8
(iii) Per Kg. of fertilizers (Kgs.)	210	647
(iv) Per irrigation (Kgs.)	2674	6522

Source : Data collected under the comprehensive scheme for studying cost of cultivation/production of principal crops.

2.62 Some major initiatives were taken in the sugar|sugarcane policy announced on the eve of the marketing of 1985-86 season crop. The statutory minimum price (SMP) for sugarcane delivered to the sugar mills was raised to Rs. 16.50 per quintal linked to a recovery of 8.5 per cent compared to price of Rs. 14 for the 1984-85 crop. The price was also announced, one year in advance, for the 1986-87 crop at Rs. 17 per quintal. Similarly, the levy percentage was reduced from 65 to 55, implying that the sugar mills were free to market 45 per cent of their production in 1985-86 at the going market rates, compared to only 35 per cent allowed in 1984-85. The proportion has been raised further to 50 per cent in 1986-87. It has also been announced that the SMP for 1987-88 will be still higher at Rs. 18 per quintal. The raising of the SMP has tended to the influence States in enhancing their 'advised' prices. Higher free-sale quotas have improved the economic viability of the sugar factories, who in turn are expected to pay higher prices to cane suppliers as they are in competition with manufacturers of khandsari and gur. As a result of these measures the production of sugarcane and sugar has increased and prices have remained relatively stable.