

## CHAPTER 2

### AGRICULTURAL PRODUCTION

2.1 Agricultural production in 1980-81 is expected to fully recover from the set-back suffered due to the severe drought in 1979-80. Vigorous steps were taken in 1980-81 to ensure adequate and timely supply of fertilisers and other critical inputs. Agricultural extension machinery was effectively mobilised for the transfer of available technology to the farmers. In 1980-81 weather conditions have been normal in most parts of the country. As a result, agricultural production this year may increase by about 19 per cent over that of 1979-80. This may be compared with a decline of 15.5 per cent in 1979-80 over 1978-79 and an increase of 3.4 per cent in 1978-79 over 1977-78.

2.2 The improvement in agricultural production, besides contributing substantially to the growth in real national product, will also ameliorate inflationary pressures and improve industrial production. The experience of the last two years confirms the growing resilience of agriculture. While the soundness of the strategy followed so far remains undiminished, there is need for reducing the existing imbalances in the crop-mix and the amplitude of fluctuations in the production of coarse cereals and other dry crops. At the same time, intensive research must strive to achieve quick breakthroughs in pulses and oilseeds whose production has been fluctuating around a stagnant level for many years. Price policies should aim not only to ensure remunerative prices to farmers but also to achieve a better cropping-mix.

#### Performance in 1979-80

2.3 Agricultural production suffered a serious set back in 1979-80 on account of one of the worst

droughts experienced in recent years. The decline in output was all pervasive, affecting *khari* as well as *rabi* foodgrains and non-foodgrain crops. The production of foodgrains declined in 1979-80 by 23 million tonnes to 109 million tonnes or by 17.5 per cent. Nearly half of the decline was due to lower output of rice. The worst sufferers were bajra and barley among cereals and gram among pulses. The production of gram at 3.28 million tonnes was lower by as much as 42.8 per cent compared with the previous year and it was the lowest during the last 30 years.

2.4 Cash crops, excepting cotton and jute, were also adversely affected, though not to the same extent as foodgrains. The production of five major oilseeds namely, groundnut, rapeseed and mustard, sesamum, linseed and castorseed declined by 12.7 lakh tonnes or 13.6 per cent over that of 1978-79. Of these, the output of groundnuts declined by 4.4 lakh tonnes or by 7 per cent and that of rapeseed and mustard by 4.3 lakh tonnes or by 23 per cent. The decline in sugarcane output (in terms of gur) was 24 lakh tonnes or 15.3 per cent.

2.5 While the decline in the output of rice, maize and other coarse cereals was mainly because of lower yields, in the case of bajra, gram and sugarcane there was an appreciable shrinkage in acreage. While *khari* foodgrain production declined by 19.2 per cent, the production of *rabi* foodgrains was also lower by 15 per cent resulting in an overall decline in agricultural production by 15.5 per cent in 1979-80. Trends in major crops in recent years are presented in the following table :

TABLE 2.1  
Agricultural Production

	(Million tonnes/bales*)								
Crop	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80
Rice	43.07	39.25	44.05	39.58	48.74	41.92	52.67	53.77	42.19
Wheat	26.41	24.74	21.78	24.10	28.85	29.01	31.75	35.51	31.56
Other cereals	24.60	23.13	28.83	26.13	30.40	28.88	30.02	30.44	26.73
Pulses	11.09	9.91	10.01	10.02	13.04	11.36	11.97	12.18	8.37
Foodgrains	105.17	97.03	104.67	99.83	121.03	111.17	126.41	131.90	108.85
Oilseeds (5 major)	8.75	6.86	8.85	8.53	9.91	7.83	9.00	9.35	8.08
Sugarcane	11.63	12.76	14.43	14.72	14.41	15.85	17.96	15.73	13.33
Cotton (Lint)	6.95	5.74	6.31	7.16	5.95	5.84	7.24	7.96	7.70
Jute & Mesta	6.83	6.09	7.68	5.83	5.91	7.10	7.15	8.33	8.02
Potato	4.83	4.45	4.86	6.23	7.31	7.17	8.14	10.13	8.31

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

2.6 The decline in agricultural output of this order adversely affected all sectors of the economy. However the resilience that the economy has acquired in recent years is evident from the fact that whereas in the wake of the comparable drought of 1965-66, the country had to import about 10 million tonnes of foodgrains, during 1979-80 drought it was possible to meet the requirement of the public distribution system, drought relief and the expanded National Rural Employment Programme entirely from the domestic buffer stocks built up in earlier years.

### Recovery in 1980-81

2.7 Weather conditions during *kharif* 1980-81 were normal except in some parts of West Rajasthan, Karnataka, Andhra Pradesh and Tamil Nadu. The rainfall from March, 1980 onwards was particularly good in the eastern and north eastern regions. The widespread rains during May were followed by timely arrival of the South-West monsoon. Total precipitation was normal or above normal in most parts of the country except in Tamil Nadu, West Rajasthan and Rayalseema where it was deficient. While crops in eastern Uttar Pradesh, Orissa and Assam suffered due to floods, those in the western region were adversely affected due to failure of rains in the months of September and October.

2.8 On the whole, the *kharif* crops have done well and agricultural production in 1980-81 is expected to substantially regain the ground lost in 1979-80. Available indications suggest that the production of *kharif* rice may exceed the record level of 49.34 million tonnes achieved during 1978-79. The output of other *kharif* cereals and pulses is also expected to recover to the 1978-79 level. As a result, the production of *kharif* foodgrains is anticipated at around 80 million tonnes, an increase of more than 25 per cent over the corresponding level of 1979-80.

2.9 Cash crops are also expected to show a distinct improvement over last year's level. The production of sugarcane, cotton, jute and mesta may be quite close to the 1978-79 levels. However, *kharif* groundnuts production may be somewhat lower, at around 4.60 million tonnes as against 4.70 million tonnes produced in 1978-79.

2.10 The outlook for *rabi* crops is good. Weather conditions and availability of moisture were favourable for normal *rabi* sowings in Punjab, Haryana, Jammu and Kashmir, Western Uttar Pradesh, Western Rajasthan, Gangetic West Bengal, Western Andhra Pradesh, Tamil Nadu and parts of Karnataka. There was however, deficiency of rainfall in the post-monsoon period in the rest of the country particularly in Bihar, East Rajasthan, Madhya Pradesh and Maharashtra. Since then, the outlook has improved significantly with the occurrence of widespread rains in late December and January. These rains have enabled farmers to undertake late sowings of wheat.

2.11 With the substantial *kharif* output and bright prospects for *rabi*, agricultural production over the

year may rise by 19 per cent in 1980-81 over the production in 1979-80. Foodgrain production in 1980-81 may even exceed the record level of 132 million tonnes reached in 1978-79.

2.12 The experience of drought in 1979-80 and the subsequent recovery in 1980-81 highlight the important fact that the country's production potential has increased very appreciably over the last decade. It is borne out by the fact that the peak of 108.4 million tonnes reached by 1970-71 has been exceeded by the trough of 108.9 million tonnes in 1979-80. The peak production in 1978-79 was also about 9 per cent higher than the earlier peak of 1975-76. Moreover, despite the much greater severity of the drought of 1979-80, than that of the one experienced in 1965-66, the decline in foodgrain production was of the order of 17.5 per cent against 19 per cent in 1965-66. The crops which suffered most by drought were bajra, gram, pulses and oilseeds. It is also evident that crop production in the country continues to be heavily influenced by weather conditions. The amplitude of fluctuations has been significant in all crops, particularly in the crops grown under the dry conditions. Even in respect of irrigated crops such as rice, wheat and sugarcane, there was a considerable decline in production on account of the drought. Of the total decline of 23 million tonnes in foodgrains, as much as 11.6 million tonnes has been in rice and nearly 4 million tonnes in wheat. As for sugarcane, one reason for the sharp decline in production may be that the year 1979-80 coincided with a significant downswing in the sugarcane cycle.

2.13 It is also important to remember that although appreciable increases have taken place in irrigated area and gross cropped area with consequent improvements in productivity, yet irrigation itself is vulnerable to the vagaries of nature. Failure of rains also means less water in reservoirs and wells. Thus, even irrigated crops such as summer rice, wheat and sugarcane, suffered declines in production due to inadequate availability of irrigation water.

### Long-term Problems

2.14 The analysis of long term trends in agriculture in the 1979-80 Economic Survey referred to the evidence of a more rapid growth of productivity in the recent years. However, the fact remains that the success of the high yielding varieties seeds has so far been somewhat limited both in terms of coverage of crops and coverage of area. Among foodgrains, it has been limited to wheat and to a lesser extent rice. There has been no significant technological advance in coarse grains, pulses, and oilseeds and this is reflected in the virtual stagnation in their production. Furthermore, while the new technology has been evolved for and proved successful in regions which have assured water supply, it has yet to be effectively adapted and extended to dry and semi-arid areas.

2.15 Even in the case of wheat the growth rate seems to have slowed down during the last few years. This was to be expected because productivity has

already reached a high level in areas endowed with irrigation and other infrastructural facilities. For relatively dry areas, suitable high yielding varieties of wheat have yet to be evolved.

2.16 In the case of rice, growth in productivity is confined to a few non-traditional rice growing areas such as Punjab, Haryana and Western Uttar Pradesh. However, their contribution to the increase in rice production has been substantial on account of the use of high yielding varieties of seed and related inputs. The growth in production in the traditional rice growing areas of the southern and eastern regions has been slow. Until productivity increases significantly in these areas, the overall production of rice cannot achieve the full potential. One of the important factors for the lack of spread of new rice technology to traditional areas is that rice is largely grown as a *kharif* crop, when proper water management, particularly in the low lying areas, becomes difficult during monsoon. Inadequate moisture under drought conditions and excessive moisture due to lack of proper drainage in periods of excessive rains, militate against better production. There is, therefore, need for taking up programmes for water management in various areas of the country. A more sustained effort has to be made to educate farmers in water management and water harvesting techniques. Greater attention has also to be directed to evolving high yielding varieties which can withstand water-logging and those which can be grown under dry conditions.

2.17 In respect of rainfed crops, a breakthrough in technology is not in sight though efforts are continuing in this direction. Constraints on raising production of rainfed crops such as coarse grains, pulses and oilseeds are well-known. Firstly, an effective set of technologies and extension methodology have yet to be devised for rain-fed crops and areas. Secondly, the high degree of uncertainty of rainfall together with the relative poverty of the farmers in these areas make the application of even known improved practices both difficult and risky. Expansion of irrigation in these areas tends to be used by more profitable crops such as wheat, rice and other high yielders. Even unirrigated areas with better production potential attract wheat and rice cultivation rather than that of coarse grains, pulses and oilseeds. This is mainly due to high relative profitability of the preferred crops, taking into account both yield and price factors. It is, therefore, of the utmost importance that efforts at achieving technological breakthroughs in oilseeds, pulses and coarse grains should be vigorously pursued so that, together with proper pricing, procurement and processing techniques, a more balanced and profitable crop-mix can be attained. As production of rain-fed crops has remained stagnant during the last decade, fluctuations in production have led to sharp increase in their prices. The country has, therefore, been compelled to import large quantities of edible oils at considerable expense of foreign exchange in order to meet domestic demand and to moderate prices. In the light of new strains on the balance of payments, it may not be feasible to continue such heavy imports

of edible oils for an indefinite period. This is therefore, a challenging area for rapid import substitution. Another area requiring special and sustained efforts is pulses, an important source of protein in Indian diet, which cannot even be imported as large enough quantities are not available abroad.

2.18 Sugarcane production is governed by specific economic and physical factors which cause wide cyclical fluctuations in its output. These fluctuations in supply have disproportionate effect on growers' income due to wide variation in prices, which are exacerbated by the competing requirements of sugar, khandsari and gur producers. Sugarcane is mostly grown in irrigated areas. However, being a highly water intensive crop, its production is also vulnerable to the variation in monsoon. Due to these factors, sugarcane production follows a cyclical pattern, with a certain degree of regularity. It appears that the downtrend of the cycle which began in 1975-76 reached the bottom of the trough in 1979-80. Since then the acreage under sugarcane seems to have entered an upward phase of a new cane cycle. Though it is not possible to precisely measure the duration of the cycle or its upswing, typically the upswing lasts for about two years followed by another year or two of the downswing. The present upswing, therefore, may be of two years' duration. As the State Government advised prices for the current season are much higher than the statutory minimum prices, the realisations of cane growers are likely to be higher and will assist sustaining the upswing of the cycle.

2.19 Apart from the cyclical problem, the growth of sugarcane output has been lagging behind the growth in demand for sweetening agents, particularly sugar. Since the possibilities of increasing area under sugarcane are limited, increase in production can come mainly through higher productivity which has remained almost stagnant for several years. It is essential to intensify efforts for raising yields, especially by upgrading the productivity of ratoons.

2.20 The agricultural sector occupies an important place and will continue to do so in the Indian economy. It has the potential to enable the economy to tide over the difficult period during the 1980s. It has, however, to be noted that despite remarkable increase in the production of wheat, and that of rice in non-traditional areas, mainly due to higher productivity, agricultural production has grown at an annual average rate of only 2.8 per cent during the period 1967-68 to 1978-79. This is much lower than the growth rate of 4 per cent envisaged during the Sixth Plan period. The requisite increase in agricultural production could be achieved only by higher productivity. To this end it is necessary to adopt varied approaches. The potential of the technological breakthrough in wheat and particularly in rice, has not been fully realised and should therefore be pursued and exploited still more effectively. Simultaneously oilseeds, pulses and coarse grains as well as dry and arid regions must be rapidly tackled through research, extension and management. Attention also

needs to be paid to greater diversification of the farm enterprises. Remarkable localised developments have taken place in animal husbandry, poultry farming, fishing and horticulture. These need to be made more broad-based through larger programmes and projects and better integration with crop developments and area use.

2.21 Indeed, a wide gap exists between the average yields of important crops in the farmers' field in rainfed areas and the potential yields obtainable in similar areas with improved technology and inputs under controlled conditions. The research conducted under the auspices of the All-India Coordinated Research Project for Dry Land Agriculture has shown that with improved technology, the average yield of crops like bajra and groundnut can be increased manifold even with low fertility and average management. There is need to make fuller use of results of research for dry farming techniques and to delineate reliable periods of rainfall on a short-term basis. This will enable the evolution of most suitable cropping systems for different areas in the country and introduction of suitable inter-cropping under which the associated risks of crops failure are greatly reduced. Furthermore, the productivity of inter-cropping system can be greatly improved by scientific methods including manipulation of appropriate plant formation, genotype and soil water management practices.

2.22 Another aspect requiring more adequate attention is the need for plant protection. It seems that for many crops the benefits of the application of pesticides, fungicides and other plant protection chemicals are indeed large.

### Inputs

2.23 During 1979-80, additional area of 2.29 million hectares is estimated to have been brought under irrigation, thus raising the cumulative level of irrigation potential to 56.8 million hectares. Of this increase, about 0.89 million hectares have been covered under major and medium irrigation projects and 1.4 million hectares under minor works. The target for 1980-81 has been placed at 2.4 million hectares. In view of the importance of irrigation to the extension of new technology for raising production and improving employment potential, development of irrigation will continue to receive a high priority in the coming years. However, it has not been possible to step up the annual growth in irrigation potential through major and medium projects by more than 8 lakh hectares during the last five years. Shortage of materials, escalation in costs and consequent delays in execution have brought about this situation, which calls for urgent study and rectification. While the increase in the irrigation potential through major and medium projects will continue, a major contribution in this respect will have to come from minor irrigation works in the immediate future for rapid utilization of water resources.

2.24 Fertiliser consumption has continued to show a rising trend. Despite the drought, total consumption

in 1979-80 went up from 5.12 million tonnes to 5.26 million tonnes, an increase of 2.7 per cent. This may be compared with the increase of 25.6 per cent and 19.3 per cent respectively during 1977-78 and 1978-79. Considering the sharp decline in cultivated area during 1979-80 even this modest increase in fertilizer consumption is not insignificant. Furthermore, the increase in the phosphatic and potassic fertilizers has been faster than that in nitrogenous fertilizers, confirming the trend noted earlier towards a more balanced use of various plant nutrients.

2.25 A major development during the year was the increase in fertiliser prices by about 38 per cent with effect from 8th June, 1980. The price of urea was increased from Rs. 1,450 to Rs. 2,000 per tonne, a price level which prevailed in 1974-75. In order that an increase in prices of this order may not adversely affect fertiliser consumption, it was simultaneously announced that support/procurement prices of agricultural commodities would be approximately adjusted to take care of increased cost of inputs like fertilizer and diesel. Indications are that fertilizer consumption in 1980-81 may be about 5.6 million tonnes as against 5.26 million tonnes in 1979-80, an increase of 7 to 8 per cent despite a measure of supply constraints due to shortfalls in domestic production of fertiliser and difficulties in transporting imported fertilisers. Since productivity response from fertilizer application is still favourable, the growth in fertilizer consumption is likely to continue provided demand can be adequately met. In view of the continuing rise in fertiliser consumption and shortfalls in domestic production, our dependence on imports is likely to continue. This would involve a rising import bill for fertilizers as the international prices of feed stocks are likely to remain on the uptrend. As foreign exchange is now emerging as an important constraint, it will be necessary to ensure higher capacity utilization of indigenous fertilizer industry and to devote serious attention to the efficient utilization of fertiliser in the country. In fact, even in Punjab and Haryana, which have made remarkable strides in fertilizer use, plant nutrients are not being applied in optimal mixes as determined by proper soil analyses. In other States the situation is worse.

2.26 The use of chemical fertilizer undoubtedly yields rapid increases in productivity provided adequate moisture is available. It is, however, highly energy intensive. There is an impression that easy availability of chemical fertilizer has tended to reduce the attention which farmers and agricultural scientists and administrators must continue to devote to organic manures and plant materials. At present there is a considerable wastage of organic matter and it is necessary to improve its utilization and marketing through application of new techniques and organisation. Conjunctive use of both chemical fertilizer and organic manure in an optimal manner is not only conducive to long-term soil fertility but would also reduce, to a certain extent, dependence of agriculture on oil or gas based energy. It is also necessary to put in more vigorous efforts at popularising bio-gas plants.

2.27 The severe drought of 1979-80 resulted in a big set back to the programme of high yielding seed

varieties. The area under high yielding varieties which had shown an un-interrupted growth since the inception of the programme in 1967-68, registered a decline of about 6 million hectares, from 41.10 million hectares in 1978-79 to 35.20 million hectares in 1979-80. The area under HYV was in fact 8 million hectares short of the target of 43 million hectares. The decline was concentrated in paddy and wheat, being 19.5 per cent and 16.2 per cent, respectively. With normal weather in 1980-81 the upward trend in the area under high yielding varieties has emerged and the target of 48 million hectares fixed for 1980-81 is likely to be achieved.

2.28 The volume of institutional credit for agriculture has been expanding appreciably from year to year. The estimated disbursement of credit during 1979-80 by co-operatives, commercial banks and regional rural banks was of the order of Rs. 2550 crores. This is likely to go up to Rs. 2990 crores in 1980-81. The lending policies and procedures are being kept under constant review. The reorganisation of primary agricultural societies is also being pursued to serve the varied needs of the rural population.

2.29 However, it is disquieting to note that the levels of overdues outstanding against borrowers have been mounting over the last few years in spite of the fact that the drought year of 1979-80 was preceded by four good agricultural years in most parts of the country. The overdues of the commercial banks are around 48 per cent of the demand. The overdues of the co-operatives at all levels have increased from year to year and at present constitute about 45 per cent of loans outstanding at the level of primary agricultural societies and nearly 52 per cent in the case of land development banks. The overdues of institutional agencies have increased despite rescheduling of substantial amounts to provide relief in areas affected by natural calamities. These rising overdues block the recycling of funds and obstruct further flow of credit particularly to the poorer sections of the rural areas. It is, therefore, imperative that a proper climate is created and effective steps are taken for recovery of loans. Under present policies mechanisms exist under which adequate relief can be provided to farmers hit by adverse weather conditions by way of rescheduling of loan repayments or even write-offs in suitable cases. It is, however, essential that such relief should be restricted to non-wilful defaulters. Across the board write-offs of such dues not only confer an undue advantage on wilful defaulters at the cost of the public exchequer but could also retard recycling of institutional funds so essential for a healthy agricultural credit system.

### Policy Developments

2.30 There has been growing public commitment for ensuring greater economic security to the various sections of the population in the country. This is evident in the increasing role of Government in three directions, namely, providing for reasonable procurement/support prices to farmers, organising an efficient

and expanding public distribution system to protect the interest of the consumers and increasing employment opportunities, specially for the weaker sections of the society.

2.31 For the 1980-81 season, the procurement prices of common variety of paddy and coarse grains have been raised to Rs. 105 per quintal from Rs. 95 per quintal fixed for the previous season. This is on top of the increase by Rs. 10 allowed during each of the previous two years also. Support prices of important cash crops have also been raised. The support price of cotton has been raised from Rs. 275 per quintal to Rs. 304 per quintal and of jute from Rs. 155 per quintal to Rs. 160 per quintal. In respect of oilseeds, the support price of groundnuts has been raised from Rs. 190 to Rs. 206 per quintal, of sunflower-seed and soyabean (black variety) from Rs. 175 to Rs. 183 per quintal and that of soyabean of yellow variety from Rs. 175 to Rs. 198 per quintal. The statutory minimum price of sugarcane payable by mills was increased from Rs. 12.50 to Rs. 13.00 per quintal. However, the State Governments have fixed the state-advised prices at a much higher level, varying between Rs. 16.50 and Rs. 23 per quintal. Among pulses, the support price of arhar has been raised from Rs. 165 to Rs. 190 per quintal and that of moong and urad from Rs. 175 to Rs. 200 per quintal. For *rabi* cereals, the Agricultural Prices Commission have recommended that the procurement price of wheat be raised from Rs. 117 to Rs. 127 per quintal and of barley from Rs. 67 to Rs. 85 per quintal.

2.32 In some cases the order of increase allowed is more than what was recommended by the Agricultural Prices Commission. For example, the APC had recommended a procurement price of Rs. 100 per quintal for common variety of paddy, Rs. 97.50 per quintal for coarse cereals and Rs. 300 per quintal as the minimum support price for cotton. While making these recommendations, the APC had taken into account the increase in input costs as a result of enhanced prices of fertiliser, diesel, etc. The Government, however, decided to increase the prices by higher amounts to provide adequate incentive for higher production and procurement.

2.33 Higher agricultural support prices must be sustainable by supply and demand balance of the relevant commodities. Otherwise, Government may be forced to acquire excessive stocks which cannot be absorbed by the market at those prices. It is also essential to balance the interests of farmers and consumers. Similarly, it is necessary to avoid excessive subsidisation of inputs. If pursued indiscriminately these measures can become vehicles of inflation and particularly hurt the interest of the weaker sections who neither have a marketable surplus, nor are in possession of productive assets so as to benefit from cheaper inputs. Moreover, an undue increase in the procurement or support price of one commodity in relation to others can bring about an undesirable

inter-crop balance. An increase in real incomes can be achieved only through higher productivity and through substantial improvement in the marketing infrastructure, particularly by expanding the role of cooperatives.

2.34 The role of agricultural pricing policy should not be limited only to ensuring remunerative prices to farmers, but should also extend to achieving a better inter-crop balance through a desirable cropping-mix and reducing the existing variability of agricultural production and its consequent effects on the price levels and national income.

2.35 Government has decided to make the public distribution system a permanent feature of the economy. This is made feasible by the agricultural price support and buffer stocking policy of the Government. This is intended to ensure that the vulnerable sections of the society, namely, industrial workers, fixed income groups and weaker sections in the rural areas obtain a good part of their requirement of essential commodities at reasonable prices. The economic implication of this commitment is that the Government has to

enter into the market as a major procurement agency for essential commodities because without securing the necessary supplies it would not be able to meet the needs of the public distribution system. This also involves deployment of resources for purchasing, transporting and storing of essential commodities, and for their distribution.

2.36 Government is also committed to tackle the problem of poverty and unemployment which largely afflicts the weaker sections like small and marginal farmers, share croppers and landless agricultural labourers. With its extension to all the development blocks in the country, the Integrated Rural Development Programme is the major instrument of the anti-poverty programme. Its objective is to raise at least 15 million rural families above the poverty line during the Sixth Plan. The National Rural Employment Programme has been initiated with the dual objective of generating massive employment opportunities and developing rural infrastructure for the speedy rehabilitation of rural economy. An outlay of Rs. 340 crores has been provided for the programme in 1980-81 which is expected to generate employment of an order of 850—900 million man-days.