

CHAPTER 2

AGRICULTURAL PRODUCTION

2.1 After an increase of 15.4 per cent in 1980-81, agricultural production is expected to increase further by about 3 per cent in 1981-82. The *khari* foodgrains production is likely to be about 80 million tonnes as against 77.4 million tonnes in 1980-81. In view of the late rainfall in September 1981 and timely winter rains, the prospects of *rabi* crops are good. The total foodgrains production may reach a new peak level of 134 million tonnes in 1981-82 which will be about 2 million tonnes higher than the previous record level of about 132 million tonnes in 1978-79. Impressive increases are also expected in sugarcane, pulses, oilseeds and cotton. The strategy to raise agricultural production during the year continued to emphasise creation of further irrigation potential, fertilizer use and high yielding varieties, supply of electricity to farmers on a priority basis and positive price support policies.

Performance in 1980-81

2.2 The increase in production in 1980-81 was achieved despite erratic rainfall in several parts of the country. Foodgrains production at 129.9 million tonnes in 1980-81 was 18.4 per cent higher than 109.7 million tonnes during 1979-80 but somewhat lower than 131.9 million tonnes in 1978-79. Rice production increased by 25.8 per cent, wheat by 14.5 per cent, gram by 38.6 per cent, bajra by 37.2 per cent,

maize by 21.4 per cent and barley by 38.1 per cent in 1980-81 over 1979-80. Production of pulses also increased to 11.2 million tonnes in 1980-81 from 8.6 million tonnes in 1979-80 showing a rise of 30.3 per cent. As the cropped area increased only marginally, the increase in production was primarily due to increase in yields per hectare.

2.3 Agricultural production in 1980-81 was close to the peak level of 1978-79. Wheat production at 36.46 million tonnes was in fact about one million tonnes higher than 35.51 million tonnes in 1978-79. Rice production at 53.23 million tonnes was only about half a million tonnes lower than 53.77 million tonnes in 1978-79. However, the production of other cereals and pulses in 1980-81 was lower than that in 1978-79 by about 1.43 million tonnes and 1.01 million tonnes respectively.

2.4 The increase in the production of cash crops was also notable. Sugarcane production (in terms of gur) increased to 15.4 million tonnes which was 17.7 per cent higher than the 13.1 million tonnes in 1979-80. Production of five major oilseeds at 8.34 million tonnes was about 3.7 per cent higher than the 8.04 million tonnes in 1979-80. This was despite a sharp fall in groundnut production during the year which came down to 5.02 million tonnes from 5.77 million tonnes in 1979-80 as a result of the erratic monsoon in the major groundnut producing areas.

TABLE 2.1

Agricultural Production

(Million tonnes/baks*)

Crop	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81
1	2	3	4	5	6	7	8	9	10	11
Rice	43.07	39.25	44.05	39.58	48.74	41.92	52.67	53.77	42.33	53.23
Wheat	26.41	24.74	21.78	24.10	28.85	29.01	31.75	35.51	31.83	36.46
Other cereals	24.60	23.13	28.83	26.13	30.40	28.88	30.02	30.44	26.97	29.01
Pulses	11.09	9.91	10.01	10.02	13.04	11.36	11.97	12.18	8.57	11.17
Foodgrains	105.17	97.03	104.67	99.83	121.03	111.17	126.41	131.90	109.70	129.87
Oilseeds (5 major)	8.75	6.86	8.85	8.53	9.91	7.83	9.00	9.35	8.04	8.34
Sugarcane (gur)	11.63	12.76	14.43	14.72	14.41	15.85	17.96	15.73	13.09	15.40
Cotton (Lint)*	6.95	5.74	6.31	7.16	5.95	5.84	7.24	7.96	7.70	7.60 (P)
Jute & mesta*	6.83	6.09	7.68	5.83	5.91	7.10	7.15	8.33	7.96	8.20
Potato	4.83	4.45	4.86	6.23	7.31	7.17	8.14	10.13	8.33	9.60

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

(P) = Provisional.

The higher production in major oilseeds was largely accounted for by a sharp increase in the production of rapeseed and mustard which rose from 14.28 lakh tonnes to 22.47 lakh tonnes, close to the peak of 22.52 lakh tonnes reached in 1974-75. The other oilseeds viz., sesamum, castorseed and linseed also registered appreciable increases in production. The overall oilseeds production, however, could not recover to the 1978-79 level. Indeed, oilseeds production has tended to stagnate around 9 million tonnes during the last 10 years.

2.5 Production of jute and mesta increased by 3.0 per cent, from 7.96 million bales in 1979-80 to 8.20 million bales in 1980-81. The increase in the jute fibre was 7.3 per cent (6.07 million bales in 1979-80 compared with 6.52 million bales in 1980-81). But mesta production declined by 11 per cent during the year which depressed the overall increase in jute and mesta production. Tobacco production also showed an increase of 3.9 per cent from 439 thousand tonnes in 1979-80 to 456 thousand tonnes in 1980-81. Most of this increase was achieved through the higher yield per hectare. The provisional estimate of cotton production at 7.6 million bales in 1980-81 was, however, marginally lower than the production of 7.7 million bales in 1979-80. Production of potatoes at 9.60 million tonnes in 1980-81 was higher than that in 1979-80 but lower than in 1978-79 (10.13 million tonnes).

2.6 The substantial recovery in total production in 1980-81 was contributed by both *kharij* and *rabi* crops. However, the growth in the *kharij* foodgrains production (22.4 per cent) was higher due to the sharp increase in rice production by 25.8 per cent than the *rabi* foodgrains, which increased by 12.9 per cent. This was despite higher increases in *rabi* pulses by 33.8 per cent. A substantial fall of 26.4 per cent in *rabi* jowar depressed the average growth rate of *rabi* foodgrains production. Wheat production increased by 14.5 per cent. It may be noted that the yield per hectare of wheat has continued to show a rising trend for the country as a whole, though average yield in Punjab in 1980-81 has been lower than the 1979-80 level. In the case of rice also, the yield per hectare in Punjab has tended to stabilise after 1978-79. In Haryana, the yields of both rice and wheat have risen and come close to the levels reached in the Punjab.

Agricultural Production in 1981-82

2.7 During 1981-82 agricultural production is expected to be about 3 per cent higher than that during 1980-81. The South-West Monsoon suffered a setback in the later part of this season particularly in Punjab, Haryana, Uttar Pradesh, Rajasthan and Madhya Pradesh. Urgent steps were taken to provide electricity for tubewells and pump sets and to ensure larger releases of canal water to minimise the adverse impact on *kharij* crops in these areas. The rains in the last week of September 1981 also helped. As a result, total *kharij* production of foodgrains dur-

ing 1981-82 is expected to reach an all time high of about 80 million tonnes which is about 2.5 million tonnes higher than that in 1980-81.

2.8 During the post-monsoon period, there was a prolonged dry spell during October 1981 in the eastern region causing stress not only for the standing late paddy crop but also for the sowing of *rabi* crop. The prospects for *rabi* production, however, improved due to adequate rainfall in several parts of the country. Efforts were also made to expand the coverage of high-yielding varieties and to provide better quality seed and other inputs, including credit. As a result *rabi* production is expected to be higher in 1981-82 than in 1980-81. The foodgrains production for 1981-82 as a whole may increase to 134 million tonnes.

2.9 The prospects are equally good in regard to cash crops. According to available evidence, sugarcane production may show a significant increase in 1981-82 over the previous year. Groundnut production during 1981-82 is expected to be around 20-25 per cent higher than 5.02 million tonnes in 1980-81, because of widespread rainfall in the major groundnut producing areas. The prospects for cotton and jute and mesta production are also quite encouraging.

2.10 Significant developments have taken place in the allied activities within the rural sector namely, animal husbandry, poultry development and fisheries. Milk production has increased steadily. During 1981-82 it is expected to increase further to 32.9 million tonnes from 31.5 million tonnes in 1980-81. The target for production of eggs for 1981-82 is 13521 million numbers which is 8.2 per cent higher than 12587 million numbers produced during 1980-81. Meat production during 1980-81 at 8.9 lakh tonnes is expected to go up to 9.4 lakh tonnes in 1981-82. Total fish production during 1980-81 was 2.73 million tonnes, which is expected to go up to 2.88 million tonnes in 1981-82. The focus of attention has been on improving the quality of cattle and other animal stocks, improving the processing capacity and establishing an institutional framework for making animal husbandry and poultry products available throughout the country. Improvement in the fishing industry has also been receiving attention. There is a need to raise production in allied activities which substantially supplement incomes and meet the consumption requirements of the population.

Inputs

2.11 The effective utilization of the existing irrigation facilities and speedy creation of further potential is the key element in spreading the adoption of new technology in agriculture. During 1980-81, 2.46 million hectares of irrigation potential was created, close to the target of 2.50 million hectares and was higher than 1.98 million hectares during 1979-80. Of the total addition to irrigation potential, 1.60 million hectares was created through minor irrigation and 0.86 million hectares through medium and major irrigation projects. At the end of 1980-81, the cumulative level of irrigation potential in the country rose

to 55.02 million hectares from 52.64 million hectares in 1979-80. The target for 1981-82 is 2.63 million hectares. Despite localised shortages (cement and steel) and cost escalation, the targets fixed for irrigation during the year are expected to be substantially achieved.

2.12 Fertilizer offtake increased by 25.1 per cent in 1977-78 and 19.3 per cent in 1978-79. There was a sharp drop in the rate of increase to 2.7 per cent in 1979-80 due to severe drought. The increase was about 4.9 per cent during 1980-81, from 5.26 million tonnes in 1979-80 to 5.52 million tonnes. Concerted efforts were made to increase domestic production of fertilisers. Besides, about 28 lakh tonnes of fertiliser nutrients were imported in 1980-81 as against 20 lakh tonnes in 1979-80; during the current year also fertilizers imports will be quite substantial. In 1981-82, intensive fertilizer promotion effort has been launched in 65 districts where fertilizer consumption is low, but the potential for increase is high due to the availability of irrigation facilities. Efforts have also been directed towards reducing regional imbalances in fertilizer use. An important step taken by the Government in this direction during 1980-81 was to supply fertilizers not only upto rail-heads but also upto the block headquarters at the same price. It is estimated that 2,900 out of 5000 blocks in the country will benefit from this measure. As a result, fertilizer consumption is expected to increase further during 1981-82 because of the fact that despite enhanced prices, profitability of fertilizer use continues to be favourable to the farmers.

2.13 In view of the growing cost of fertilizer due to rising prices of feed stocks, the efforts to enhance soil fertility would need to put greater stress on the appropriate mix of the nutrients. At the same time, it is necessary to make fuller use of organic and bio-fertilizer and increase legume cropping. A National Project of Bio-Fertilizer is proposed to be taken up shortly. During 1981-82, 35,000 more gobar gas plants are planned to be installed in the country.

2.14 The distribution of certified seeds of wheat, paddy, maize, jowar, bajra, oilseeds and potatoes increased from 14 lakh quintals in 1979-80 to 25 lakh quintals in 1980-81 showing an increase of 78.6 per cent. The maintenance of the genetic quality of high-yielding seeds is essential for sustaining the improvement in productivity. The responsibility for providing breeder seed rests with the Indian Council for Agricultural Research (ICAR) and for foundation and certified seeds with the National Seeds Corporation (NSC) and the State Seed Corporations. Since shortage of breeder and foundation seed has been the main bottleneck in extending the coverage under high yielding varieties, greater efforts are being made to step up their production. The infrastructure for foundation seed production is being progressively strengthened. Diversification of certified seeds of paddy, particularly in the traditional paddy growing areas would prove

effective in raising the production of paddy in the country. At present, most of the certified seed produced consists of a few varieties such as *Jaya*, *Ratna* and *IC-20*. In wheat also, the growth in productivity can be sustained by varietal diversification in favour of those varieties which are resistant to frost and other common diseases. The need for further research in this direction, is necessary.

2.15 The area under High Yielding Varieties (HYV) resumed the upward trend in 1980-81 after a setback in 1979-80. The coverage under HYV increased from 38.4 million hectares in 1979-80 to 45.3 million hectares in 1980-81, which more than offsets the decline during 1979-80. For 1981-82, the target has been fixed at 48.5 million hectares, of which paddy would account for 20.7 million hectares and wheat 17.8 million hectares. The target is likely to be achieved.

2.16 Plant protection measures have been intensified especially for areas under HYV. The use of pesticides increased to 52,000 tonnes of technical grade in 1980-81 as against 50,000 tonnes in 1979-80. The target for 1981-82 is 61,000 tonnes. Surveys were conducted in the major *kharif* paddy growing belts and *rabi* oilseeds/pulses growing belts for pest monitoring and forewarnings during 1980-81, with a view to adopting timely and need based plant protection measures. To restrict the entry of exotic pests across the international borders, six new quarantine stations have been set up.

2.17 Institutional credit for agriculture has been rising progressively. Total disbursements of short medium and long term credit increased from Rs. 2767 crores by the end of March, 1980 to Rs. 3573 crores by the end of March 1981. During 1980-81, the cooperatives are reported to have disbursed short term loans of Rs. 1456 crores and medium term loans of Rs. 134 crores against the annual targets of Rs. 1848 crores and Rs. 170 crores respectively. The Land Development Banks advanced long term loans amounting to Rs. 352 crores during 1980-81. The credit targets for cooperatives during 1981-82 have been fixed at Rs. 1703 crores for short-term loans, Rs. 188 crores for medium term and Rs. 365 crores for long term loans. In the current financial year the disbursement of cooperative loans is expected to be higher, because there are programmes for the reorganization of primary societies into viable units in most of the States and strengthening of Land Development Banks in Bihar, Gujarat, Karnataka, Maharashtra and Tamil Nadu.

2.18 The share of weaker sections in the total institutional credit for agriculture has continued to increase. It is proposed to raise it from around 40 per cent at present to a minimum level of 50 per cent by the end of the Sixth Five Year Plan period. The recovery position of overdues has, however, continued to be unsatisfactory. The deleterious effects of the rising level of overdues on the viability of institutional credit structure and hence on agricultural

production were highlighted in the last year's Economic Survey. The problem still remains and needs to be tackled on an urgent basis.

Policy Developments

2.19 Agricultural policies have continued to focus on measures to step up productivity, to provide remunerative prices to producers, and to generate employment opportunities with a view to benefiting weaker sections in the rural areas. The Government has sought to establish an appropriate price structure for agricultural commodities. In regard to fixation of support/procurement prices, the Agricultural Prices Commission (APC) takes into account such factors as productivity, cost of cultivation and demand and supply and need to provide incentive for higher production. For the 1981-82 marketing season, the procurement prices of common varieties of paddy and coarse kharif cereals were raised from Rs. 105 per quintal in 1980-81 to Rs. 115 per quintal and Rs. 116 per quintal respectively. The procurement price of wheat was also raised from Rs. 117 per quintal to Rs. 130 per quintal. Larger increases have been effected in the prices of oilseeds with a view to encourage larger cultivation of these crops. The APC was also advised to take into consideration the increase in the prices of diesel and fertiliser following upward adjustment in the prices.

2.20 Special measures were taken to raise production of oilseeds. The strategy for increasing the production and availability of oilseeds consists of strengthening of research, extension and training, increasing the production of major oilseeds like groundnut, mustard etc., expansion of area under non-traditional crops like soyabean and sun-flower; development of perennial oilseeds like coconut, palm oil, and other oilseeds of tree origin and increasing oil availability through technological processes, such as more efficient extraction from cotton seed and rice bran. Under the above strategy, an integrated oilseeds maximisation programme has been launched with emphasis on production and distribution of improved seeds; popularisation and application of fertilizers, specially phosphatic fertilizers, to groundnut and soyabean crops, adoption of adequate and timely plant protection measures on an area basis, and demonstration of improved practices. With a view to achieving the oilseeds target of 112 lakh tonnes for 1981-82, the area under groundnut, rapeseed and mustard is planned to be increased in 61 districts under the Intensive Oilseeds Development Programme. The area under summer irrigated groundnut is estimated to have risen from 8 lakh hectares in 1979-80 to 9 lakh hectares in 1980-81. A special scheme was implemented in Saurashtra to raise groundnut production in that region from 18 lakh tonnes in 1980-81 to 23.0 lakh tonnes in 1981-82. The area under soyabean cultivation rose to more than 7.5 lakh hectares in Madhya Pradesh and Uttar Pradesh from 6 lakh hectares in 1980-81. Steps have also been taken to increase seed production for oilseeds and to provide for ground and aerial spraying.

2.21 For achieving higher production of pulses, more irrigated area is proposed to be brought under moong, urad, gram and arhar. About 40,000 quintals of certified seeds of gram were made available on subsidised basis in 1980-81, and the supply is to be raised to 70,000 quintals during 1981-82. Research for developing high yielding varieties of pulses has been intensified and steps have been taken to popularise the new varieties of pulses in irrigated areas.

2.22 Issue prices of urea were raised from Rs. 1450 per tonne to Rs. 2000 per tonne in June 1980 and to Rs. 2350 per tonne in July 1981. Prices of other fertilizers were also increased. These steps were taken with a view to reducing the growing subsidy due mainly to rising costs of domestic production and imports of fertilizers. However, the APC was advised to take into account the increase in fertilizers and diesel prices while making their recommendations about support/procurement prices of various agricultural products. The distribution margins for institutional agencies (cooperatives and agro-industries corporations and other agencies involved in the distribution of fertiliser) were also raised with effect from 15th August, 1981. The above steps were intended to ensure remunerative prices to farmers and to minimise the adverse impact of the increase in fertilizer prices on agricultural production. The productivity of fertilizer use still remains favourable to the farmers and the support price mechanism enables producers to pass on the impact of the increased input prices to consumers. To raise fertiliser consumption to desired levels, greater attention is also being devoted to improving distribution arrangements.

2.23 An important development during the year was the establishment of a new apex bank called the National Bank for Agricultural and Rural Development (NABARD). The major objectives of the Bank are : to serve as a refinancing institution for short-term credit to agriculture, rural small-scale industries, cottage and village industries, handicrafts and rural crafts, and other allied economic activities with a view to promoting integrated rural development. The bank will also provide refinance to various banks for their term lending operations for the purposes of agriculture and rural development. The authorised share capital for NABARD will be Rs. 500 crores, the paid-up capital being Rs. 100 crores, to be contributed equally by the Reserve Bank and the Government of India.

2.24 Special programmes, such as the Integrated Rural Development Programme (IRDP), the National Rural Employment Programme (NREP), the Drought-Prone Areas Programme (DPAP) and the Desert Development Programme (DDP) etc., have played an increasing role in efforts to enhance earning capacity of weaker sections in rural areas. The benefits under the IRDP are exclusively meant for specified target groups which include the poorest among the poor, namely, agricultural and non-agricultural labourers, small and marginal farmers, rural artisans, scheduled castes and scheduled tribes, and those below

the poverty line. The IRDP provides resources in the form of subsidies and loans enabling the beneficiaries to acquire productive assets for the poorest 3 million families in the country every year with a view to raising their income above the poverty line. Under this programme, a minimum of 30 per cent of the families assisted have to be from the scheduled castes and tribes. For 1981-82, the outlay from the Centre is Rs. 145 crores, and with a matching contribution from the States, the total outlay would go up to Rs. 290 crores. After a somewhat slow beginning, almost all the States have now made reasonably satisfactory organizational arrangements at the district and block levels. District Rural Development Agencies have been set up in 400 districts and most of these agencies are now functional. The initial household surveys to identify the beneficiaries have been completed in about 75 per cent of the blocks in the country. There is, however, need for considerable improvement in the provision of infrastructure facilities and physical inputs and also for training and orientation of the staff. The involvement of commercial banks in the provision of credit for IRDP is being steadily improved and the position regarding the flow of funds is being constantly monitored.

2.25 A total quantity of 2.05 million tonnes of foodgrains was allocated from public stocks to the States/Union Territories under the NREP in 1980-81. An employment generation of 32.78 crore mandays has been reported so far during the year, it is expected to go up to 45 crore mandays. Besides, the programme enables the creation of a large number of community assets like Panchayat Ghars, schools, community halls, rural roads, drains and channels, minor irrigation schemes and soil conservation schemes. With effect from 1st April 1981, the programme has become a regular part of the Sixth Five Year Plan and is being implemented as a centrally sponsored scheme on 50 : 50 sharing basis between the Centre and the States. The total provision for the year 1981-82 is Rs. 360 crores, of which Rs. 180 crores have been provided in the Central Budget and an equal amount in the State Budgets. The NREP is a more comprehensive programme than the erstwhile Food for Works Programme. Specific provision is made for the materials component with a view to ensuring the durability of assets created under the programme. Besides, preparation of a shelf of projects is an essential condition for taking up works for execution.

2.26 A revised 20-Point Programme has been announced recently. The points relating to agriculture and allied sectors are: (i) increased irrigation potential, development and dissemination of technologies and inputs for dry land agriculture; (ii) special efforts to increase production of pulses and vegetable oil seeds; (iii) strengthening and expanding coverage of integrated rural development and national rural employment programme; (iv) implementation of agricultural land ceilings, distribution of surplus land and complete compilation of land records by removing administrative and legal obstacles; (v) review and effective enforcement of minimum wages for agricultural labourer; and

(vi) vigorous pursuit of programmes of afforestation, social and farm forestry and the development of bio-gas and other alternative energy sources. Within this framework, a comprehensive programme has been worked out for the all-round development of agriculture in the "productivity year" 1982. Under this programme, production of cereals, pulses, oilseeds and dairy, poultry and marine products will be stepped up substantially.

Long Term Problems

2.27 The development in agriculture during the last decade presents a picture of rising trend in production and continued fluctuations in output in response to changes in the monsoon conditions. Such fluctuations are partly due to the fact that the Green Revolution has been concentrated in terms of crops as well as regions. During the last decade significant increases in output have been achieved through increase in yields in a few crops, which have a weight of about 55 per cent in the Index of Agricultural Production. These crops are wheat, paddy, sugarcane and potatoes. In all these crops, both area increase and the increase in yield have contributed to higher production but the share of the latter has been much more significant. In the rest of the crops, having 45 per cent weight in the Index, production has by and large, stagnated reflecting stagnation in both area expansion and yield. In some cases e.g., jowar and gram, yield has increased to a certain extent, but its impact on production has been neutralised by a decline in the area under the crop. These are also the crops which are more substantially affected during drought years, as most of them are dry crops.

2.28 The monsoon situation has continued to significantly affect paddy production even though notable increase has taken place in yield per hectare due to the spread of irrigation, high yielding varieties and new technology. It is noteworthy, however, that fluctuations in paddy production have been higher in areas where the new technology has not yet become fully entrenched. This is evident from the region-wise decline in output during the drought years 1972-73, 1976-77 and 1979-80. During these three years, the decline in paddy production due to below normal monsoon was the lowest in Haryana and Punjab. The most seriously affected States were the traditional paddy growing areas and regions where the new technology is yet to make a significant mark. In case of wheat, the production in Punjab and Haryana in fact increased, even during these years of drought. Sugarcane is basically an irrigated crop and its production by and large follows a crop cycle. As the result, the impact of weather changes as such on the sugarcane crop has not been marked.

2.29 An essential requirement for sustaining the growth of agricultural production is the continued expansion of irrigation potential and the efficient utilization of available facilities. Although substantial increase has been effected in irrigation potential during the last decade, for various reasons its full benefit is not reflected in the intensity and diversification of cropping. The irrigation system itself depends on the

monsoon conditions. The availability of water is affected by droughts, which in turn, affects crop yields, including those of high yielding varieties, where assured supply of water is a crucial requirement. Though in recent years large scale programmes of command area development have been undertaken, there is still considerable under utilisation of existing irrigation potential. Inadequate maintenance, seepage, lags in construction of field channels, deficiencies in water distribution and water management systems and delays in the development of appropriate cropping patterns are some of the important factors which adversely affect the efficiency of the existing irrigation system and hence on the intensity of cropping.

2.30 It should also be recognised that the real unit costs of additions to irrigation potential have risen very sharply during recent years. It is, therefore, imperative that the available potential is used most efficiently and supplies of irrigation water are adequately priced. It will also be necessary to drastically reduce delays in completion of projects and undertake timely and adequate repair and maintenance of the existing irrigation system, including on-farm works. The intensification of the drive to construct field channels would go a long way in accelerating the effective utilization of the available irrigation potential.

2.31 The construction of field channels has been emphasised in the Sixth Five Year Plan. During 1980-81 field channels serving 0.56 million additional hectares were constructed against a target of serving

0.60 million hectares. The target for 1981-82 is to construct field channels for 0.66 million hectares.

2.32 A break-through in higher productivity is yet to be achieved in the traditional rice growing areas. In areas where some progress has been achieved, the need for better water management is most urgent for raising paddy yields further. In regard to wheat, there is still scope for raising yields by maintaining and improving the genetic quality of high yielding seed. In case of both paddy and wheat, improvement in control of pests and diseases could also make significant contribution to higher productivity. There is also need to improve the fertiliser mix for various soil conditions.

2.33 Extension work has played a crucial role in inducing farmers to adopt new technologies with favourable effects on cropping intensity and yields. These efforts have to continue. Extension agencies need also to lay greater emphasis on the need for efficient farm management.

2.34 A major effort is necessary for stabilizing and improving yields in rain-fed and dry area, which account for a major part of the cropped area in the country and where advance so far has not been satisfactory. This would depend on the development of genetically superior and hardy varieties of seeds of crops grown in arid zones and evolution of application of new techniques. Some technologies have already been developed but have yet to be extended in a substantial manner. This is an area which constitutes a major challenge to our researchers, agricultural administrators and extension agents.