

CHAPTER 6

AGRICULTURE, IRRIGATION, FOOD AND NUTRITION SECURITY

6.1 AGRICULTURE

The agriculture in India is largely dependent on monsoon as only about 37 per cent of the Net Sown Area (NSA) is irrigated. During 1999 Monsoon (June to September), 81 per cent of the area received normal to excess rainfall. Moisture deficiency in some areas and floods in some other areas affected agriculture adversely and despite the record production of rice, foodgrains production during 1999-2000 is likely to reach a record level of 201.91 million tonnes (MT), as compared to 205.91 MT achieved during 1998-99. The sugarcane production is likely to reach a record level of 309.31 MT. But, the production of oilseeds and cotton has declined. For 2000-01 foodgrains production target has been fixed at 212 MT. The production and targets of crops are given in Annexure 6.1.1.

2. During the Ninth Plan, Regionally Differentiated Strategy has been adopted with due emphasis on checking land degradation, encouraging expansion of minor irrigation, increasing fertiliser consumption, improving input delivery system, increase in credit flow and wider coverage under crop insurance scheme. To bring in convergence among ongoing programmes and to address the state specific issues a new concept "Macro Management of Agriculture - Supplementation/Complementation of State's efforts through Work Plans" has been approved for implementation from 2000-01. The new scheme will replace a number of ongoing centrally sponsored schemes and allocation to the States by the Department of Agriculture & Cooperation (DAC) will be based on the Work Plans.

Strategy

- Convergence of on-going programmes.
- Adoption of macro-management approach, through "Work Plans" to supplement/complements the efforts of the States.

FOODGRAINS

3. For increasing foodgrains production, various schemes viz., Integrated Cereals Development Programmes (in Rice/Wheat/Coarse Cereals based cropping System's Areas (ICDP-Rice, ICDP-Wheat and ICDP-Coarse Cereals), Accelerated Maize Development Programme (AMDP), National Pulses Development Programme (NPDP) and Seed Minikits Programmes are being implemented. The three ICDP Programmes are to be merged with the scheme of Macro Management of Agriculture from 2000-01. The AMDP and NPDP will, however, continue to be implemented as separate schemes under the Technology Mission on Oilseeds, Pulses and Maize (TMOP&M).

Merger of Schemes

- Integrated Cereals Development Programme for Rice + Wheat and Coarse Cereals to be merged with schemes of Macro-Management.

Ninth Plan Targets Of Production Of Foodgrains

4. During the first three years of the Ninth Plan foodgrains production targets could not be achieved and have remained about 200 MT only which is approximately the figure of

1996-97 production (199.44 MT). However, the rice (88.55 MT) and wheat production exceeded the targets of 86.00 MT and 74.00 MT respectively during 1999-2000. If only the peak of production level of past were achieved during the current year, the foodgrains production would be 213.89 MT. Taking account of this fact alone, the target of production for the current year 2000-01 is achievable.

OILSEEDS

5. For increasing production of oilseeds, under the Technology Mission on Oilseeds, which was introduced in 1986, the Oilseed Production Programme, R&D in Post Harvest Technology for Oilseeds and Oil-palm Development Programme are being implemented as Centrally Sponsored Schemes. Besides, the National Oilseeds and Vegetable Oil Development Board (NOVODB) is supplementing the efforts of TMOP by opening new areas for non-traditional oilseeds and in non-traditional areas for promotion of additional oilseeds cultivation. It is also promoting tree-borne oilseeds. Ninth Plan target of production of 30 MT of oilseeds is achievable if the achievement of the year 1998-99 is kept in view. The year 1999-2000, however, was a bad year during which the production is estimated to plummet from the previous year's figure of 25.21 MT to 21.18 MT.

COTTON

6. For accelerating the growth in production of cotton, Technology Mission on Cotton (TMC) has been introduced as a Centrally Sponsored Scheme during 1999-2000 in 12 States of Andhra Pradesh, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal. The ongoing Intensive Cotton Development Programme (ICDP) has been merged with TMC. Although, the production trend during the first three years of the Ninth Plan are not very encouraging, the Ninth Plan target of 15.70 million bales is not very ambitious considering that the production in 1996-97 was 14.23 million bales.

JUTE & MESTA

7. The Special Jute Development Programme is being implemented in 8 major Jute/Mesta growing States of Andhra Pradesh, Assam, Bihar, Meghalaya, Orissa, Tripura, Uttar Pradesh and West Bengal. From 2000-01, jute and mesta is being undertaken under Macro Management approach. Its production has successively declined during last three years. During the Ninth Plan no target of production of jute & mesta has been fixed.

SUGARCANE

8. The Centrally Sponsored Scheme on Sustainable Development of Sugarcane Based Cropping System (SUBACS) was introduced in 1995-96. During 1999-2000 Himachal Pradesh has also been added for the implementation of the scheme. Now, this scheme is being implemented in 21 States and one Union Territory. From 2000-01, SUBACS is being undertaken under Macro Management approach. Looking at the past trends, the Ninth Plan target of 336 MT is very ambitious.

HORTICULTURE

9. Varied agro-climatic conditions in the country provide immense opportunities for diversification of agriculture and for increasing gainful employment opportunities in rural and urban areas, and also for improving nutritional status of the masses. Agro-industrial base could be substantially widened with the horticulture development. Horticulture sector, however, suffers from technological and infrastructure constraints such as small and marginal size of land holdings, pre-ponderance of old and senile trees, poor management, acute shortage of good quality seeds and planting material, prevalence of diseases and pests, inadequate post harvest handling/sorting/grading/packaging and storage facilities. Processing infrastructure and marketing network is far from satisfactory. Therefore, full potential is yet to be realized. Ninth Plan has accorded top priority to horticulture sector and it is being treated as a focus area for its all-round development.

10. The Ninth Plan envisages boost in productivity and improvement of the quality of the produce with objectives such as upgradation of production/farm technologies, development of strong base for supply of inputs, transfer of technology, human resource development and improvement in marketing infrastructure. Various programmes have been made operational to increase the productivity and quality of existing plantation and to increase availability of improved varieties of seeds and elite planting material. Thrust is given on area expansion, technology transfer and post harvest handling/marketing.

11. In order to improve the infra-structural support, a programme has been launched for setting up of 12 lakh tonnes of new cold storage capacity, rehabilitation/modernisation of 8 lakh tonnes of existing cold storage capacity and creation of 4.5 lakh tonnes of onion storage capacity. Under this programme, 25 per cent subsidy, subject to a maximum of Rs.50 lakh for each unit (with more liberal subsidy amount up to 33-1/3 per cent subject to a maximum of Rs.60 lakh in North-East) is available. An outlay of Rs.175 crore has been provided for subsidy component for cold storage during Ninth Plan which is expected to bring in additional private/public/cooperative investment of Rs.477 crore, thus making total amount of investment upto Rs.652 crore. The scheme was launched towards end of 1999-2000. An integrated development of horticulture on Mission Mode has been planned for all round development of North-East region. Ninth Plan target for production of fruits and vegetables is kept at 179 million. However, with the anticipated achievement of only 122 million tonnes in 1998-99, the achievement of Ninth Plan target seems to be a difficult task.

PLANTATION CROP

12. Southern and North-eastern regions of the country are endowed with high potential for plantation crops such as tea, coffee, rubber, etc. Commodity Boards are contributing their mite to the development efforts in enhancing the production and productivity of plantation crops by extending its coverage to new areas and increasing the productivity of small growers.

13. The physical performance of horticulture and plantation sub-sectors are given in Annexure 6.1.1 and Annexure 6.1.2 respectively.

SOIL AND WATER CONSERVATION AND WATERSHED DEVELOPMENT

14. Various schemes such as Soil Conservation in Catchments of Flood Prone Rivers and in Catchments of River Valley Projects (FPR&RVP) and Watershed Development Programme for Shifting Cultivation Areas (WDPSCA) are being implemented to check siltation of water bodies and soil erosion. During 1998-99 as against a target of treating 5.90 lakh hectares, an area of 5.65 lakh hectares was treated under these Programmes. During 1999-2000 a target of treating an area of 1.65 lakh hectares was fixed, which is likely to be achieved. During 2000-2001, these schemes are proposed to be covered under the Programme of Macro Management.

Credit Flow

- Setting up of specialized banks in each State.
- Issues of Credit Cards to farmers.
- Introduction of Rashtriya Bima Yojna.

15. The development of rainfed agriculture is being addressed through National Watershed Development Programme for Rainfed Areas (NWDPR). Watersheds are now proposed to be developed under Common Approach/Guidelines which have been framed/finalised. These guidelines aim at harmonious development of watersheds under various programmes of Ministry of Agriculture, Ministry of Rural Development and Ministry of Environment & Forest. During 1999-2000, a Watershed Development Fund (WDF) has also been created by NABARD with central assistance to cover 100 priority districts in a period of three years.

AGRICULTURAL INPUTS

Seeds

16. To augment seed supply, two new schemes namely, Pilot Scheme for Seed Crop Insurance and Scheme for Establishment and Maintenance of Seed Bank were introduced during 1999-2000. Incentives/assistance for production, storage, transport and distribution of quality and improved seeds under various crop production oriented schemes will be continued during 2000-01. The availability of certified/quality seeds has increased from 90.76 lakh quintals in 1997-98 to 104.38 lakh quintals in 1998-99. The production target fixed for the terminal year of Ninth Plan (2001-02) is 109.66 lakh quintals and achievable.

Fertilisers

17. The consumption of chemical fertiliser during 1999-2000 is estimated to reach 183.72 lakh tonnes of nutrients (NPK) as against 167.97 lakh tonnes during 1998-99, showing a significant increase. The Centrally Sponsored Scheme on Balanced and Integrated use of Fertilisers which aims at achieving the twin objectives of strengthening soil testing facilities and ensuring promotion of balanced fertiliser use will be continued during 2000-01. During the Ninth Plan period, the existing 519 Soil Testing Laboratories would be modernised and new laboratories would be established in areas where these facilities are weak and 36 new compost plants are proposed to be established.

Plant Protection

18. Under the Integrated Pest Management (IPM) Programme, thrust on conservation of existing bio-control fauna and use of bio-pesticides, bio-control agents and products of plants origin will continue. The existing 26 Central Integrated Pest Management Centres located in 22 States/UT will continue their activities for organising field demonstrations and trainings on IPM technology to educate farmers and field functionaries. Demonstrations of IPM approach will also be continued under various crop production oriented schemes.

Agricultural Implements & Machinery

19. For the promotion of Agricultural Mechanisation a Centrally Sponsored Scheme is in operation since 1992-93. Under the scheme, during the first three years of the Ninth Plan, a total of 13406 tractors were distributed on subsidy. During 2000-01, 5200 tractors are proposed to be distributed. The training needs of machine operators, farmers and officers of State Governments, are being met through organisation of training programmes at Farm Machinery Training & Testing Institutes located at Budhni in Madhya Pradesh, Hissar in Haryana, Garladinne in Andhra Pradesh and Bishwanath Charaili in Assam. During 1999-2000, a total number of 3638 trainees against the target of 3500 were imparted training. During 2000-01, 3500 persons are to be trained in operation and maintenance of farm machinery and equipment.

Agriculture Extension

20. Training infrastructure in the country for agriculture extension workers has been strengthened at the existing National Institute of Agricultural Extension Management at Hyderabad. During 1999-2000, the ongoing Centrally Sponsored Scheme "Women in Agriculture" was extended to five North-Eastern States with a view to provide extension services to the women farmers in these regions.

Agriculture Credit And Cooperatives

21. Agricultural credit is an important input for ensuring growth in agriculture. Agriculture credit is disbursed through a multi-agency network, consisting of Cooperatives, Commercial Banks and Regional Rural Banks (RRBs). The disbursements to Agriculture Sector was Rs.26411 crore in the terminal year of the Eighth Plan (1996-97). Although the actual disbursements of credit has been increasing in the first two years of the Ninth Plan, there has been shortfall against the projected requirement of credit recommended by the Ninth Plan Working Group on agricultural credit and cooperation. The credit flow from all agencies is targeted to reach a level of Rs.60,842 crore in 2001-2002 (the terminal year of Ninth Plan) as per the Working Group.

TABLE 6.1.1
Flow of Credit to Agriculture & Allied Activities

(Rs. in crore)			
Year	Recommended By Ninth Plan Working Group	Disbursements	Percentage Shortfall
1997-98	33375	31956	(-) 4.3
1998-99	38645	36897*	(-) 4.5
1999-2000	44780	41765**	(-) 6.7

2000-2001	52108	NA	-
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Source: NABARD * Provisional ** Estimated

22. According to RBI Report on Trends & Progress in Banking (1998-99), the relative share of agriculture credit in net bank credit stood at 12.8 per cent in March, 1997 and 11.7 per cent in March, 1998 as well as in March, 1999. As against the target of 40 per cent for priority sector lending by banks, the sub target for agriculture has been fixed at 18 per cent. The declining share of agriculture in the net bank credit against 18 per cent target is a matter of concern. More credit needs to flow to agriculture for providing timely and adequate credit to farmers for increasing agriculture production and productivity.

23. Various measures have been taken to improve credit flow to agriculture sector concerning procedural simplification for credit delivery, delegation of more powers to bank managers, introduction of composite cash credit limit to farmers, introduction of one specialised agricultural bank in each state to cater to the needs of high-tech agriculture, introduction of cash credit facility, issue of Kisan Credit Cards to farmers to draw cash for their production needs, augmenting Rural Infrastructure Development Fund (RIDF), etc.

24. There is, however, problem of overdues that dampen the flow of credit besides affecting adversely the economic viability of the lending institutions especially, cooperatives and RRBs. A proposal for revamping of cooperative credit structure has been initiated by the Government during the Ninth Plan to revitalise the cooperative credit structure and enable the system to respond adequately and effectively to the emerging needs of the users and the market. To strengthen equity base and improve financial performance of RRBs, the total capitalisation support given to RRBs is Rs.1094.21 crore till March, 2000.

25. Introduction of National Insurance Scheme (Rashtriya Bima Yojna) by replacing earlier Comprehensive Crop Insurance Scheme from rabi 1999-2000 has been a significant development in the Ninth Plan. Nine States and one UT have implemented the Scheme of Rashtriya Bima Yojna.

OUTLAYS AND EXPENDITURE

26. During 1999-2000 Department of Agriculture and Cooperation incurred an expenditure Rs.1440.63 crore on various schemes for the development of agriculture against an outlay (BE) of Rs.1941.00 crore. For 2000-01 an enhanced allocation (BE) of Rs.1950 crore has been provided to the department. The details of outlays and expenditure are given in Annexure 6.1.2.

ANIMAL HUSBANDRY AND DAIRYING

Livestock Development

27. The major thrust in the Ninth Plan is concentrated on the improvement of production and productivity of livestock through genetic manipulation, production of quality feed and fodder, animal health care and prevention of important diseases. In

Livestock Development

- Genetic improvement.
- Disease control & prevention.
- National Project on Cattle & Buffalo Breeding introduced to provide breeding inputs at farmers' doorsteps.

pursuance of the strategy of doubling food production, the Department of Animal Husbandry and Dairying has reprioritised its plan priorities and identified 11 specific schemes for Special Action plan for achieving an accelerated growth of livestock products.

Milk and Dairy products

28. India has become the World's largest milk producing country and the milk output is estimated to achieve the level of 78.1 million tonnes during 1999-2000. However, it appears that with the present growth rate of milk production (about 4 per cent per year) it will be difficult to attain the Ninth Plan target of milk production set at 96.49 million (Annexure 6.1.2). Two centrally sponsored schemes namely (i) Extension of Frozen Semen Technology and Progeny Testing Program and (ii) National Bull Production Program which have boosted the dairy development efforts of the State Governments are now being merged into one program 'National project on Cattle and Buffalo Breeding with an emphasis on delivery of breeding inputs and services at farmer's doorsteps and improvement of indigenous cattle and buffalo breeds.

29. An Integrated Dairy Development Program in non-Operation Flood, Hilly and Backward areas was launched during Eighth Plan and has been extended during the year 1999-2000 with a total provision of Rs.45 crore. Since the starting of the scheme, 38 projects with a total outlay of Rs.189.84 crore have been sanctioned in 20 States.

Poultry Including Egg

30. Egg production during 1999-2000 is anticipated to be 31320 million compared to 800 million eggs two decade ago. The broiler production has also accelerated at an annual growth rate of 15 per cent and stands to about 450 million broilers per annum at present. The poultry sector has flourished with the active participation of organised sector, which controls about 70 per cent of the production, management and marketing. The rest 30 per cent of the unorganised sector whose contribution cannot be undervalued is now being focused upon by the Centre by promoting backyard poultry. Ninth plan target of egg production (35 billion no. egg) is likely to be achieved. A new Centrally Sponsored Scheme "Assistance to State Poultry/Duck Farm" is being implemented for the first time in the North Eastern States including Sikkim on a hundred per cent Central assistance to strengthen at least two duck/poultry farms in each State. The program will be extended to other States in the ensuing years.

Wool

31. Wool production of about 46.1 million kg is expected to be achieved during 1999-2000 as against 41.7 million kg during 1989-90. The Central Sheep Breeding Farm, Hissar is engaged in the production and dissemination of acclimatised stud-rams to various State Sheep Farms for crossbreeding and genetic upgradation. Presently importing of germ plasm for upgradation of indigenous breeds is proving difficult in the background of many leading countries getting affected by scrapie and BSE. Piggery development is of considerable significance, particularly in the North Eastern region of the country.

Improvement of Slaughter Houses

32. A large number of slaughter houses in the country have poor facilities for hygiene and sanitation. A centrally sponsored scheme "Assistance to States for Improvement/Modernisation of Abattoirs/Establishment of Carcass Utilisation Centres and Primary Flaying Units" was initiated to improve the conditions of the slaughter houses but the implementation of this schemes has not been satisfactory; projects sanctioned in different states in the Seventh and Eighth Plan are still to be completed.

Eradication Of Animal Diseases

33. National Project on Rinderpest Eradication (NPRE) is continuing in all the States and Union Territories since May 1992. Based on the documentation generated by NPRE, Govt. of India declared the country provisionally free from rinderpest w.e.f. 1.3.1998 which was accepted and notified by Office International des Epizooties (OIE). Under the scheme "Assistance to States for Control of Animal Diseases" grants-in-aid is provided to control various diseases including FMD. About 40 million vaccinations against FMD were carried out during 1999-2000 and 22 million vaccinations are expected to be carried out during 1999-2000.

FISHERIES

34. The fisheries sector plays an important role in the national economy and in the socio-economic development of the country. It also plays a significant role in supplementing family incomes and generating gainful employment in the rural sector, besides providing cheap and nutritional food to millions of people and provides employment to about 3.84 million fishermen. Moreover, an impressive segment of the population is engaged in ancillary activities associated with fisheries and aquaculture. This sector has been one of the major contributors of export earnings in recent times and is estimated to have attained a level of Rs.5096 crore in 1999-2000.

35. The main objectives of the fisheries development programmes of the government during the Ninth Five Year Plan are: optimising production and productivity, augmenting export of marine products, generating employment, improving the socio-economic conditions of the fisher folk/fish farmers, conservation of aquatic resources and genetic diversity, increasing the per capita availability and consumption of fish etc. The Ninth Plan also focuses on an integrated approach to sustainable development of fisheries and aquaculture.

36. Fisheries is a State subject and as such the primary responsibility for development rest with the State Governments. However, supplementing the efforts of the state governments, the central government has been implementing various central sector and Centrally Sponsored Schemes for the development of fisheries in collaboration with the States/UTs. The Ninth Plan fish production target is set at 70.40 lakh tonnes envisaging a growth rate of 5.64 per cent per annum. An allocation of Rs.800 crore has been earmarked for the fishery sector during the Ninth Plan period. Physical targets/achievements and financial outlays/expenditure during the Ninth Plan period are given in Annexure 6.1.1 and Annexure 6.1.2 respectively.

37. One of the strategies for development of inland fisheries has been propagation of scientific aquaculture in ponds and tanks through the Fish Farmers Development Agencies (FFDAs) under the Centrally Sponsored Scheme. A total of 422 FFDAs have been

sanctioned for establishment under this programme covering all the potential districts in the country. The Agencies provide a package of technical, financial and extension support to fish farmers. Under another scheme, 39 Brackishwater Fish Farmers Development Agencies (BFDAs) have been sanctioned in all the coastal States and the UTs of Andaman and Nicobar Islands to develop brackishwater aquaculture in the country. In the marine sector, some of the major programmes are motorisation of traditional craft, reimbursement of central excise duty on HSD oil supplied to mechanised fishing vessels below 20 meters length etc. In addition to 6 major fishing harbours, 45 minor fishing harbours and 153 fish landing centres, another 3 major fishing harbours, 10 minor fishing harbours and 30 fish landing centres have been envisaged during the Ninth Five Year plan. A number of welfare programmes for fishermen such as construction of houses, insurance scheme and saving-cum-relief are being implemented by the government.

38. Considering the inland fishery resources in the country, two new programmes (i) Integrated developmental of inland capture fishery resources; and (ii) Development of coldwater fisheries in hilly regions are being formulated by the Government for implementation during the Ninth Plan period.

AGRICULTURE RESEARCH AND EDUCATION

39. For carrying out research in identified frontline areas ICAR has built a network of National Agriculture Research System which have 46 Institutes including 4 deemed Universities, 4 National Bureau, 31 National Research Centres, 9 Project Directorates, 158 Regional Stations and 80 All India Coordinated Research Projects (AICRPs) besides 30 State Agriculture Universities (SAUs) and one Central Agriculture University (CAU) for promotion of research in several frontier areas. The prominent institutions include National Gene Bank on Plant, Animal, Fish and Micro-organisms, National Research Centre on Biotechnology, DNA Finger Printing Technology, Integrated Pest Management, Weed control, Biological control and Phytotron Facility. ICAR also has collaborative programmes with several International institutes or their regional centres.

40. During the year, 40 improved varieties – 16 in cereals, 8 in pulses, 6 in oilseeds, 7 in fibre crops and 3 in forage have been released (1999-2000). Also, 2,3034.89 quintals of breeder seeds including cereals (1118.34 Q), oilseeds (7554.18 Q), pulses (3981.53 Q) and fibre crops (156.83 Q) have been produced. Integrated Pest Management (IPM) methods for management of pests have been refined in respect of rice, cotton, pulses and oilseeds. DNA Finger printing of varieties of aromatic rice (48), wheat (46), barley (15), Oliferous Brassica (42), sunflower (16), mungbean (32), cotton (70), tomato (30) and brinjal (16) have been undertaken. New Guava variety Lalit and new Papaya variety Surya have been released. Mango variety Tenneru has also been released. Three F1 hybrids, one each in water melon, tomato and bottle gourd have been identified. Soil resource maps of 26 States in 1:2500,000 scale have been developed. Six row manual, 8 row self-propelled rice transplanter and 8 row pre germinated paddy seeder have been released for commercial exploitation. Solar dehydrators for fruits and vegetables, cylindrical dryers for soya based idli/dosa mix slurry have also been released. 8-frame honey extractors have also been released for commercial use.

41. Backyard and rural poultry system have been standardised for farmers of remote and far-flung areas. Grampriya and Vanaraja as layer strains and Krishibro as broiler

strains have been developed. New improved Diagnostic kits for diagnosis of brucellosis infectious bovine, rhino tracheitis (IBR), F&M D and Blue Tongue (BT) have also been developed. Embryo transfer technology (ETT) standardised at 10 centres and extended for production of elite germ plasm of Murrah and Surati buffalo, Tellichery goats, gaddi sheep and Rathi and Sahiwal cattle.

42. Marine pearl culture has been commercialised and technology for breeding and export of ornamental fishery has been developed. ICAR have also demonstrated farm level production of 14 tonnes/ha of fish in the States of Punjab, Haryana and Andhra Pradesh. New Hatcheries to improve availability of fish seeds have been added. 53 KVKs have been added to an existing number of 261 KVKs in the country. This has been achieved through upgradation of Trainers' Training Centres (TTCs) and Zonal Research Centres (ZRCs) under NATP programme.

New Initiatives

43. National Agriculture Technology Project (NATP), which is an externally aided project is now fully functional. National Bureau of Agriculturally important Microbes have started implementation. National Research on Seed Spices is under implementation. A Regional Station of the Central Saline Soil Research Institute, Karnal has been set up at Lucknow. Agriculture University at Jammu is being set up. Network on Haemorrhagic Septicaemia has been established. Rural Agriculture Work Experience scheme is also now under implementation. Agriculture Technology Information Centres (ATICs) have also been set up at 40 places in SAUs and ICAR institutions.