

## **CHAPTER - 7**

### **AGRICULTURE PRODUCTION**

7.1 Agriculture plays a vital role in the economic development of the State and continues to be the backbone of our economy. In the coming years, agriculture will face many challenges due to the rising population. This will directly increase the demand for food and non-agricultural sectors, like industry and urbanisation will put greater demand on land and water resources available for agriculture. The scope of increase in arable land and exploitation of additional water resources for irrigation will also decline in future. Hence, there is a greater need for conservation and efficient utilisation of natural resources. Agriculture needs intensification of production and improved efficiency in use of resources.

7.2 Rajasthan is the largest State in the Indian Union with a geographical area of 3.42 lakh sq. kms. Agriculture contributes about 27 per cent of State Domestic Product. The average size of land holding in the State is 3.96 ha. as compared to 1.41 ha., at the all India level.

7.3 Rajasthan being a predominantly agrarian State, 70 per cent of the population is living in rural areas and about 70 per cent depends on agriculture as source of livelihood. The geographical features of Rajasthan is dominated by the Aravalli range which divide the State into two distinct zones. The region to the west and north-west, comprising of eleven districts and nearly 61 per cent of the total area of the State, is known as the great Indian Thar Desert. The soil type in this region is sandy which is poor in nitrogen and has low water holding capacity. The south-east and eastern part of the Aravalli Hills is productive for agriculture purposes having clay loam soil type. The rainfall fluctuates from 200-550 mm in the western and semi arid parts to 550 -1000 mm per annum in south eastern and eastern part of the Aravalli Ranges.

#### **The Salient Features of Agriculture in Rajasthan**

- Agriculture in Rajasthan is primarily rainfed.
- The period of monsoon is short, around three months. Its onset is late and withdrawal early, in comparison to other States.
- 90 per cent of the rainfall is received during monsoon season. In addition to spatial variation in rainfall there is great variation in the yearly pattern.
- 65 per cent of the total cultivation is under kharif season and is mostly dependent on rainfall, which is aberrant and uncertain.
- 60 per cent of the irrigated area is under wells and tube wells. The under ground water table, is falling by one meter every year.

## **Constraints**

### **Natural Constraints**

- Rainfall is highly inadequate and aberrant in nature.
- 61 per cent area lies in arid and semi-arid tracts, where soils are having poor fertility, low water holding capacity, high infiltration rate and shallow in depth in some areas.
- One million hectare area is under problematic soils (saline and alkaline).
- Due to scarcity of rainfall there is limited availability of ground water.
- The crops suffer due to high temperatures and wind velocity.

### **Research Constraints**

- Lack of suitable drought resistant, short duration, high yielding varieties of cereals, pulses and guar in kharif season
- Limited expertise available for research in agro-forestry, horticulture and fodder crops
- Limited knowledge and literature available for post harvest management activities for the crops
- Negligible research facility in bio-technology including tissue culture
- Little information on cropping system based agriculture for different agro climatic conditions
- No research in organic farming
- Package of practices for integrated pest management not available for many crops
- The research on efficient use of water saving devices like sprinklers, drip irrigation lacking
- Lack of effective strategy for management of problematic soils

### **Infrastructural Constraints**

- Total 32397 retail outlets for Agri. Inputs.
- Area coverage per bank 102.87 sq. Km.
- Inadequate supply of power
- Lack of post harvest marketing and processing infrastructure support like cold storage, grading, washing, cleaning, waxing, packaging and container services
- Farm mechanisation is slow
- Poor infrastructure support for horticulture and vegetable crops including marketing

## **Major interventions during Tenth Five Year Plan**

- **Krishi Yojna – Aap ke Dwar:** A special campaign " Krishi Yojna – Aap ke Dwar" was organised in all Panchayat Samities from 8th December, 2005 to January, 2006. In these campaigns manufacturers, dealers, public representatives, scientists and farmers actively participated. Sprinkler, Pipeline, Drip Irrigation, Agri. Implements, Tractors, Plant Protection Equipments were displayed during the campaign. Follow up campaigns were also organised from 20th Feb, to 10<sup>th</sup> March 06. This programme has now been institutionalized.
- **Increasing Seed Replacement Rate (SRR):** For enhancing seed replacement rate of field crops both in Kharif and Rabi season, action plan has been developed at village, Panchayat, Tehsil and District level to augment availability of improved / certified seed.
- **Diversification- Cereals to Oilseed, Pulses & Horticulture:** Looking to the precarious water regime in the State and falling water table, the Department of Agriculture has made conscious efforts to encourage diversification from high water requiring to low water requiring and more remunerative crops like pulses, oilseeds and horticulture crops (seed spices, fruit plants, medicinal & aromatic plants).
- **Installation of water saving devices:** Rajasthan has country's 1% water resources. Further, out of 237 blocks 140 are over-exploited, 50 are critical, and 14 semi-critical and only 32 in safe category. For efficient use of water, during 2005-06, 38003 Sprinkler sets have been distributed against a target of 27000 Sprinkler (141%), 5950 Km pipe line have been laid against a target of 2400 Km (247.6%) and under drip irrigation 1960 ha area covered against a target of 1600 ha (122.5%).
- **Programme of Gypsum Distribution:** Gypsum is a source of secondary nutrients i.e. Calcium and Sulphur which increases oil in oilseeds, protein contents in both oilseeds and pulses crops. Apart from this, it is also used as soil amendment for reclamation of alkali soils.
- **Promotion of Organic Farming by laying out vermi culture demonstration and organizing training/ workshops:** Organic farming is becoming increasingly popular and global demand for organic products is growing rapidly. It also helps in sustainable agriculture. For successful vermi compost demonstration 4 training camps were organized as follow up to ensure the success of vermi composting technique and also its spread among other cultivators in the village.
- **Balanced and integrated use of quality fertilizer on soil test basis:** To maintain soil fertility and sustainable development of agriculture, several steps like use of fertilizers on soil test basis, soil fertility mapping at Panchayat level and distribution of soil health card have been taken up. Besides this, demonstration on balanced and

integrated use of fertilizers have also been conducted on the farmers field.

- Farm Mechanization: Productivity of farm depends considerably on the availability of farm power coupled with efficient farm implements / machines and their judicious utilization.
- PP Measures, IPM, Distribution of PP equipments and Farmers Field Schools(FFS): Intensive cultivation and development of high yielding genotypes and use of fertilizers have resulted in plants becoming more susceptible to attack of insect / pest in the crop. Use of chemical for protection of crop is not cost effective and it leaves residues in the crop and causes deterioration in soil. Indiscriminate use of pesticides needs to be checked for protection of environment and its harmonious development. This has led to greater thrust on IPM where there is balanced use of pesticides and also integrating other techniques and options available to keep the pest population below economic threshold level. IPM includes cultural, biological, mechanical, chemical, control in such a way that it does not deteriorate the soil and environment. It has been proposed to give higher emphasis on promoting integrated pest management technology by organizing Farmers Field Schools(FFS) on IPM.
- FFS Based Crop demonstration laid out and minikits distributed.
- Target 20+: To raise productivity of mustard from 13.74 qtls per ha to above 20 qtls per ha. in Bharatpur district, Target 20+ campaign have been launched. Awareness workshop and necessary tie-ups for seed, inputs supplying agencies has also been made. It is estimated that Mustard yield has increased to 1500 Kg\ha from last years (2004-05) 1258 Kg\ha. This will help in generating Rs. 300/- crores of farmers level.
- Operation Mustard 150%: To increase existing productivity of Mustard (992 kg\ha) by 150% in Nagaur district, Operation Mustard 150% has been launched. It is expected that Mustard yield will increase to 1590 Kg\ha.
- Operation Barley 150%: To increase existing productivity of Barley (2653 kg\ha.) by 150% in Jaipur district, Operation Barley 150% has been launched. Barley yield is estimated to reach 3299 Kg\ha. During the Campaign 1.00 lac pamphlets and 20000 folders have been distributed.
- Rabi 2005-06 District level Conference / Workshop: To increase the productivity in Rabi 2005-06, one day "Rabi 2005-06 District level Conference / Workshop" have been organized at District level. Field functionaries, KVK Scientist, University personals have participated in the conference.

## **Policy Intervention and Strategy for Eleventh Five Year Plan**

7.4 In the Eleventh Five Year Plan the natural endowment constraints like climate, problematic soil, saline water, arid lands, low rainfall (late arrival and early withdrawal) will continue to influence the growth of agriculture sector. Therefore, interventions required for sustainable development of agriculture in the State would continue to depend largely on efficient management of land, water technology adoption, extension management, research and development in seed sector, value addition in crops and increase in infrastructure support leading to Agro-processing and value addition in crops in commodities.

### **Vision**

- Access to improved agricultural practices through extension services, printed literature and other media support.( Every farmer should get farm specific technical message in print form before every crop season.)
- Optimum use of land resources through soil analysis in each crop season. Soil analysis to include the recommendations for micronutrient also.
- Ensuring availability of good quality seed of desired crop / variety to each farmer at his doorstep.
- Encouraging optimum use of water through installation of sprinklers on every operational wells by end of the XI Plan. (Extend the coverage from existing 3 lac to 7 lac wells / tube wells).
- Shift the focus of Extension workers from crop production to Post Harvest Management and Marketing.

### **Strategy**

#### Harnessing the Potentials of Crop Productivity

7.5 There is gap between potential and actual yield at farmer's field. The productivity can be enhanced by:

- Production and distribution of quality seed – There is need to ensure that good quality seed is available for cultivators for which adequate seed production programme in public & private sector need to be initiated and necessary quality control measures adopted.
- Soil Health: Application of fertilizers on soil test based recommendations including micronutrients. “Every farmer should get soil health card in every crop season, which will include the recommendation for micro nutrient also.
- Increase soil health cards distribution to cultivators from present level of 5% to 20% of farmers by the end of XI Five Year Plan

- Soil test labs to be established at each block level by end of the XI Plan Period.
- Promotion of Integrated Pest Management - With focus on agronomic & cultural practices, encourage use of eco-friendly pesticides, and bio-agents. FFS based demonstration for adoption and popularization of IPM practices.
- Integrated Nutrient Management (INM)
  - INM would include greater use of vermi compost / organic manures.
  - Enhanced use of Bio-fertilizers
  - Strive for balanced use of fertilizers and aim for optimum NPK ratio to maintain soil health by the end of XI plan.
- Popularization of efficient water use practices
  - Popularization of irrigation on volumetric basis.
  - Popularization of water saving devices.
  - Methods of irrigation-shifting from flood irrigation to sprinklers/drips.
  - Selection of efficient water use crops.
  - Scheduling of irrigation at critical growth stages.
- Focus on rainfed areas
  - Watershed approach.
  - Water harvesting.
  - Adoption of soil moisture conservation practices.
  - Use of short duration varieties to overcome biotic & abiotic stresses.
  - Research support for development of drought resistant and photo insensitive varieties
  - Promotion of agro forestry particularly silvi pastoral models in low rainfall areas
- Strengthening of input delivery mechanism
  - Greater involvement of private sector in delivery of services.
  - Involvement of private input dealers for popularization of low cost inputs like bio-fertilizer, gypsum etc.; Necessary incentive be provided.

### Farm Mechanization

- Promote energy efficient farm machinery. Reduce energy consumption from present level 0.93 KW/ha to 1.21 KW/ha by the end of XI Five Year Plan.
- Encourage use of solar / non-conventional energy.
- Emphasis will be given on R&D of hand tools and bullock drawn implements suitable for all agro climatic conditions of the State.
- Develop and promote inter-cropping seed drill.
  - SAUs to develop suitable farm implements including seed drill/ seed-cum-fertilizer drill for different agro climatic conditions
- Train unemployed youth for repair and maintenance of implements at village level.
- Train local manufacturers for fabrication and repair of agricultural machines at village level
- Drudgery reduction equipments / implements be provided at higher subsidy for women farmers.
- For Hi-tech infrastructure development special efforts be made to utilize funds support under various schemes of CSS, NHB, NHM etc.(protected cultivation i.e. green houses, shade houses and walking tunnel included in farm mechanization)

### Crop Diversification

- Diversification from cereals crops to high value crops like pulses/ oilseeds/vegetables/fruits/spices
- Promote short duration and less water consuming crops specially in rainfed areas
- Promote drip irrigation in vegetables and fruits plants for higher yields and quality produce.
- Marketing support for introduction of new crops – Declaration of minimum support price and ensuring buy-back guarantee
- Cultivation of Jetropha, JOJOBA, Olives, Asparagus and Plantation Crops on marginal lands.
- Promotion of varietal diversification as per farming situation to enhance the productivity level of crops and also help in value addition and agro processing.
- There is a need to promote contract farming : large area (1000 acre) in each of the Agro Climatic Zone / Agro Ecological Zone with monetary incentives and buy back guarantee. Contract farming model to be encouraged with Government as facilitator.
- Pledge loan scheme be extended by making it more farmer friendly

- Efforts be made to reduce cost of agricultural credit.
- Farm plan be prepared for each farmer including precision farming to popularize the concept of crop rotation, diversification, maintenance of soil fertility, efficient use of water, discourage monoculture etc. It is proposed to cover approximately 5% of farmers by the end of XI Five Year Plan.

### Seed Replacement Rate

7.6 "Every farmer should get at all time a good quality seed of desired crop / variety at his door step" For Increasing SRR and ensuring quality seed following actions are proposed:-

- Increase in Seed Replacement Rate:-
  - For Kharif crops, it is proposed to increase the SRR from present level of 9.16% to 24.49% by the end of the XI Five Year Plan.
  - For Rabi Crops, it is proposed to increase the SRR from present level of 15.4% to 26.41% by the end of the XI Five Year Plan.
  - Under Seed Spices, it is proposed to increase the SRR of coriander and fennel from the present level of 2.5% and 12% to 21% and 30% respectively by the end of the XI Five Year Plan.

### Enhance Water use Efficiency

7.7 As water is limited, efficient use of water is important. "Sprinklers should be installed on every operational wells by end of XI Plan i.e. to extend the coverage from existing 3 lac to 7 lac wells / tube wells"

- Sprinklers, drip and pipelines along with efficient water management practices for crop production to be emphasized with adequate financial support during the XI Plan.
- Pressurized irrigation system be promoted for rational use of irrigation water particularly in orchards and vegetables.
- PPP Model: Looking to the high cost of investment and technical specialization in laying out of water saving devices particularly drip systems, there is need to involve manufacturers / companies of drips in lay out of systems on farmers field. Such private participation may also be in popularizing water saving devices & imparting trainings on efficient water management issues.
- Crop & plant varieties should be developed which have higher water use efficiency.
- Area specific / crop specific models of Micro Irrigation Systems including sprinkler / drip etc. be developed and popularized.
- Take up programmes on rainwater harvesting and other water harvesting systems for recharging of groundwater.



- Construction of Diggis and storage tanks to enable operation of micro irrigation systems in canal command areas.
- Construction of water storage tanks / farm pond to be encouraged in rainfed areas with adequate financial support.
- Need to develop appropriate technologies for:
  - Treatment of brackish water
  - Treatment of sewage water and recycling of sewage water for irrigation purpose
- Policy Issues
  - Incentive/ disincentive for efficient cropping pattern in the command areas to be given to WUAs/ Farmer's Organization.

### Human Resource Development

7.8 "Need to shift the focus of Extension workers from crop production to Post Harvest Management and Marketing"

- Vocational programme in field of plantation and nursery management, post harvest management, food processing, preservation and seed production.
- Gender Issue:
  - As most of the activities on farm are conducted by farm women, training programmes to focus on women training needs.
  - Encouraging recruitment of women in agriculture i.e. at Agri. Supervisor and AAO level.
- Entrepreneur development programme – input dealers, watershed management, gardeners etc.
- Incentive to service sector units – service centers like Hariyali with support of Agriculture Graduates be promoted. Financial assistance at par with support as provided to Industry Department be given.
- Promotion of market driven research: To make agriculture a profitable venture, there is a need to have studies on what is the potential & demand of a commodity in market. Keeping market trends including export markets we need to have research / study support on crop / varieties.
- Capacity building of extension personnel by training in different fields in reputed institutions.
- Exposure visit to other State to understand best agriculture practices which have relevance for Rajasthan. Out side the country visits may also be included for greater awareness and development in field of agriculture.

- Specialized short term courses i.e. hi-tech agriculture, PHM, drip and fertigation system, IPM, INM, etc. be made mandatory for extension officials for effective delivery of messages
- Refresher courses particularly for Agriculture Supervisor and AAOs to constantly upgrade their knowledge on latest development in agriculture sector.
- Information Communication Technology:

7.9 "Every farmer should get farm specific technical message in print form before every crop season"

- Based on the cultivated area and quantum of work, re-organization in extension network is required for effective transfer of technology among cultivators. There is need of re-organization in Agriculture Department across the various disciplines i.e. Research, Extension and Statistics Wing for effective working and placement of persons as per need and specialization to meet and address the new development in Agricultural Sectors. This will lead to effective delivery of extension services.

### **Research & Education**

#### **Rajasthan Agriculture University (RAU), Bikaner and Maharana Pratap University of Agriculture and Technology (MPUAT, Udaipur)**

7.10 Rajasthan Agricultural University, Bikaner was established on August 01, 1987 with the objective of imparting education, generating information through basics and applied research & to disseminate through extension services for sustainable development of agriculture in whole of the state. In November 1999, the university was bifurcated with the creation of a new University, Maharana Pratap University of Agriculture & Technology with the headquarter at Udaipur. At present RAU, Bikaner has a service area of 21 districts of arid & semi-arid regions. MPUA&T, Udaipur has a service area of 11 districts of south & south-eastern parts of the state. The major mandates of the two Agricultural Universities are (i) Education (ii) Research and (iii) Extension, keeping in view the agricultural development aspects of the respective service areas.

7.11 For the purpose of developing improved varieties of crops and cost-effective improved technologies for sustainable development of agriculture in the seven agro-climatic zones spread over the service area, RAU, Bikaner has seven Agriculture Research Stations. For veterinary & animal science research the University has three Livestock Research Stations at Bikaner, Chandan & Nohar along with two Animal Disease Surveillance & Diagnostic Centres (APEX Centres) at Bikaner & Jaipur. The University has also a National Seed Project at Bikaner with the mandate of producing breeder seed used for certified seed production by

GOR/GOI agencies for the benefit of farmers. NSP unit also produces truthful labeled seed for direct supply to the farmers.

7.12 MPUAT, Udaipur has three Agriculture Research Stations at Udaipur, Kota, Banswara; Agriculture Research sub-stations at Pratapgarh, Aklera; Dryland Farming Research Station, Bhilwara and Live Stock Research Station at Vallabhnagar. The University has also a NSP Unit catering the need for Breeder Seed Production and Production of TFL seed for benefiting the farmers in the operational area of 11 districts.

7.13 For extension activities RAU, Bikaner has the KVKs at Bikaner, Jaisalmer, Fatehpur, Jhunjhunu, Bharatpur, Dholpur, Nagaur, Dausa, Sriganganagar, Navgaon, Ajmer, Jalore, Hindon-Karoli & Swaimadhapur. MPUAT, Udaipur has 10 KVKs at Banswara, Baran, Bhilwara, Bundi, Chittorgarh, Dungarpur, Jhalawar, Rajsamand, Sirohi & Kota.

#### Review of Existing Programmes/Schemes and provision during Eleventh Five Year Plan

7.14 During X<sup>th</sup> Plan, the quality of education has improved substantially which is reflected by higher placement of students through campus interviews. To take advantage of opportunities arising out of globalization course curriculum has been re-oriented for entrepreneurship. The new college of Horticulture & Forestry established in Jhalawar in 2004 which will cater to the needs of trained and skilled manpower in Horticulture & Forestry sector in the state.

7.15 The extension programmes of the University have been reset to disseminate technologies through programmes like village adoption, development of model technology units at KVK's, knowledge centres in villages etc. The University has embarked on ambitious programmes of promoting horticulture.

7.16 A provision of Rs. 2275.00 lacs has been proposed for XI<sup>th</sup> Plan, out of which Rs. 305.00 lacs for annual plan 2007-08 for RAU, Bikaner and provision of Rs. 4125.00 lacs has been proposed for XI<sup>th</sup> Plan, out of which Rs. 556.00 lacs for Annual Plan 2007-08 for MPUAT, Udaipur.

#### **AGRICULTURE DEPARTMENT**

7.17 An outlay of Rs. 49000.00 lacs has been provided for XI<sup>th</sup> plan and Rs. 6325.00 lacs for 2007-08. The scheme wise details are as under:-

#### **Direction and Administration**

7.18 A provision of Rs.162.55 lacs has been proposed for XI<sup>th</sup> Plan out of which Rs. 35.51 lacs for annual plan 2007-08 for office expenditure, AMC of computers, audio-visual aids, photocopiers & consultancy, awards, and contractual services etc.

## **Seed Sector**

7.19 Seed is an important component in agriculture development. A provision of Rs. 350.00 lacs has been proposed for XIth Plan out of which Rs. 54.00 lacs for Annual Plan 2007-08. Sub-component wise details are given below:

- Retail Outlets - A sum of Rs.40.00 lacs is proposed for the XIth Plan and during 2007-08 an amount of Rs.8.00 Lacs has been proposed for the retail outlets of certified seed in the remote rural areas for greater availability of improved seed to the farmers.
- Buffer Stock of Certified Seed by RSSC - Rajasthan State Seed Corporation is committed to provide good quality certified seeds to farming community. Timely availability of good quality seeds in required quantity plays a vital role in increasing production and productivity. Particularly in Kharif crops, if good quality certified seeds of required varieties are made available in time, seeds alone can increase production significantly under existing agronomic practices. A sum of Rs. 100.00 lacs is proposed for the XIth plan & provision of Rs. 15.00 lac is proposed during 2007-08 .
- Operating Cost for Seed Testing Laboratories - To ensure quality seed distribution, it is necessary to test the seed samples, therefore, operating cost for seed testing labs is required. A sum of Rs. 150.00 lacs is proposed for the XIth plan & an amount of Rs.20.00 lac is proposed for 2007-08.
- Operating Cost for GOT, Hybridity Test Farms & DNA Finger Printing Laboratory - Under CSS scheme GOT, hybridity test farms & DNA finger printing labs are being established during 2006-07. These farms & labs would require operational cost for smooth running. For this, a sum of Rs. 60.00 lacs is proposed for the XIth plan & an amount of Rs.11.00 lac is proposed for 2007-08.

## **Manures & Fertilizers**

7.20 A provision of Rs. 315.00 lacs has been proposed for XIth Plan out of which Rs. 50.00 lacs for Annual Plan 2007-08. Sub component wise details are given below:

- Operating Cost for Fertilizer Quality Control Laboratory & Soil Testing Lab - A sum of Rs. 200.00 lacs is proposed for the XIth plan & Rs.30.00 lac is proposed in Annual Plan, 2007-08 for operational cost for Fertilizer Quality Control Lab and 12 Soil Testing Labs.
- Strengthening & Operational Cost of Pesticides Residue, Pesticide Testing & Phytosanitary Laboratory - With the support of CSS, pesticide/residue testing/PSC laboratories are being established during 2006-07. For strengthening & operational cost of pesticides

residue, pesticide testing & phytosanitary laboratory, a provision of Rs. 55.00 lacs has been proposed for XIth Plan out of which Rs. 8.00 lacs for Annual Plan 2007-08.

- Block-Wise Soil Fertility Mapping for Remaining Blocks - Out of 237 blocks, soil fertility mapping has been completed for 205 blocks. Block-wise mapping will also be completed for rest 32 blocks. A provision of Rs.30.00 lacs has been proposed for XIth Plan out of which Rs. 10.00 lacs for Annual Plan 2007-08 for POL, contingency of vehicles, fixtures and chemicals and TA, DA of staff engaged in fertility mapping task.
- Popularizing use of Bio-Fertilisers - A provision of Rs.30.00 lacs has been proposed for XIth Plan out of which Rs. 2.00 lacs for Annual Plan 2007-08 for Durgapura Rhizobium Laboratory during 2007-08 for testing of the Bio-fertilizers manufactured by other agencies.

### **Plant Protection**

7.21 Eradication of Pests & Diseases in Endemic & Non -Endemic Areas- A provision of Rs.330.00 lacs has been proposed for XIth Plan out of which Rs. 50.00 lacs for Annual Plan 2007-08 for eradication of Pests/ Diseases in endemic/non-endemic areas by use of PP chemicals.

### **Commercial Crops**

#### State Matching Share for Centrally Sponsored Schemes

7.22 Although no indication has been given by GoI regarding Centrally Sponsored Schemes for XIth Plan and Annual Plan 2007-08. A provision of Rs.10450.00 lacs has been proposed for XIth Plan out of which Rs. 1383.00 lacs (Rs. 1200.00 lacs for ISOPOM, Rs. 123.00 lacs for ICDP-Cotton and Rs. 60 lacs for ATMA project) for Annual Plan 2007-08 as State's matching share.

### **Extension & Training**

7.23 A provision of Rs. 7615.05 lacs has been proposed for XIth Plan out of which Rs. 1074.01 lacs for Annual Plan 2007-08. Sub component wise details are given below:

- Training of Staff & Education - A sum of Rs. 325.00 lacs is proposed for the XIth plan & during 2007-08, a provision of Rs.58.00 lac is proposed for staff training for developing communication, skill, and dissemination of technology, adoption process and capacity building for effective extension and need based transfer of technology.
- Demonstration on Organic Farming and Vermiculture - Organic Farming is becoming increasingly popular and global demand for organic product is growing rapidly. It also helps in sustainable agriculture, keeps environment pollution free and takes into account the health concern of the consumers.

7.24 However, as Earthworm plays an important role in recycling of farm waste and provides vermi-compost which has higher nutrients than the farm yard manure, will be promoted during XIth plan. It also provides other micronutrients and helps in enhancing the organic matter content in the soil. Vermi compost technique can be easily propagated at the farmers field with some training and technical know how on production technology on vermi-compost. Looking to the popularity of the programme and with more and more NGOs getting involved in promoting vermi compost activity, there would be no shortage of availability of earthworms for vermi composting. It is therefore, proposed that during XIth plan, 3 Kg earthworms shall be provided @ Rs. 375/- F.O.R. destination to the cultivators. Besides this, effective training would also be imparted on sites of demonstrations for greater publicity and spread of technology among neighboring farmers for which a provision of Rs. 100/- per training is proposed. Four such training shall be held at the village level. A sum of Rs. 1590.00 lacs is proposed for the XIth plan & an amount of Rs. 159.00 lac is proposed for the purpose during 2007-08.

- Agriculture Information - A sum of Rs. 1525.00 lacs is proposed for the XIth plan & a provision of Rs. 235.00 lac has been proposed towards advertisement, documentation and publicity of Agriculture Information & Agriculture Technology through Exhibitions (State / National Level Exhibitions / Expos), Use of Electronic and Print Media i.e. Doordarshan (Navankur), AIR (Kheti Ri Bantan) sponsored programmes, information dissemination through News Papers etc.
- Other Government Declaration (Governor/CM/FM) - A token provision of Rs 0.05 lacs is proposed for the XIth plan & a token provision of Rs. 0.01 lac is proposed during 2007-08 for inclusion of policy/schemes announcements made by Hon'ble Governor/ Hon'ble CM/Finance Minister etc. for new activities which are not covered under the on going programmes of the Department.
- Agriculture Extension Services - A provision of Rs 4175.00 lacs for XI Plan and Rs. 622.00 lac for Annual Plan 2007-08 has been provided for various on going following field extension activities:
  - Adoption of Village - Presently the training & research institutions are organising in house training for farmers and workshops etc. All the ATC's / KVK's /RTC's scientists will adopt a few villages located in the vicinity of these centers. On this theme, the resource persons will organize trainings in the adopted villages and seasonal demonstrations on specific technology that needs to be popularized as per need of the area. A provision of Rs 50.00 lacs for XI Plan and Rs. 10.00 lac for Annual Plan for 2007-08 is proposed.

- Need Based Extension - Presently, 450 Kisan Salahakar Samitis which have been constituted at Assistant Agriculture Officer level and are represented by one farmer, one Para Extension Worker and Village Extension Worker of each Gram Panchayat Area. This Samiti will discuss village plan of kisan mandal and forward the same to Department of Agriculture for funds etc. A sum of Rs. 325.00 lacs is proposed for the XIth plan & a provision of Rs. 65.00 lac has been proposed during 2007-08.
- Incentive to Girls in Rajasthan - Literacy among women is only 44.34% and in rural areas it is a dismal 37.74% .Farming is the main source of subsistence in rural areas of the state. Involvement of women in agriculture ranges up to more than 70% in different parts of the Sate. In Rajasthan, more than 70% of the agricultural operations are performed by farm women. Girls would be encouraged by providing incentives to them for taking agriculture subject at Sr. Secondary and College level. A sum of Rs. 600.00 lacs is proposed for the XIth plan and Rs. 65.00 lac during 2007-08. Incentive to girls taking agriculture subject at Sr. Secondary will be given Rs 3000 and for graduation level Rs 5000.
- Rent for Kisan Sewa Kendra - Presently there are 4373 KSKs in the State, which are rendering services to farmers. But all of them do not have buildings facility of their own. However, some KSK buildings have been constructed in a phased manner. Still majority of KSKs are being run in private buildings due to non-availability of own building; hence, the proposal to provide nominal rent @ Rs. 150/- per month per KSK till all the KSK buildings are constructed. A sum of Rs. 160.00 lacs is proposed for the XIth plan and Rs. 32.00 lac during 2007-08.
- Inter & Intra State Exposure Visit of Farmers - The gap between technology evolved and adopted is widening day by day. Direct intervention between farmers & research scientist, is however limited in existing system. The village level extension workers whose function is to work as an intermediary between the farmer and research scientists provide the cutting edge between the farmers and research extension linkage. It is proposed to introduce and institutionalize system of providing direct interface between farmers and scientists on problems and constraints faced in agriculture and communicating relevant technological advances to the farming community. A sum of Rs. 1500.00 lacs is proposed for the XIth plan and Rs. 150.00 lac during Annual Plan 2007-08.
- Communication & Mobility of Field Staff - For effective implementation of agriculture development activities and to

facilitate better mobility of field functionaries for effective monitoring, a sum of Rs. 290.00 lacs is proposed for the XIth plan and Rs. 75.00 lac during 2007-08.

- Women Empowerment - A project on technological empowerment of women in agriculture is proposed to be undertaken as joint programme of State Government and SAUs. Under the project, women farmers will be trained in agriculture technology to become Vikas Vahini for technology dissemination. For this, a sum of Rs. 200.00 lacs is proposed for the XIth plan and Rs. 32.00 lac during 2007-08.
- Organization of Camps (Krishi Yojana Apke Dwar) - For better delivery of extension services and for providing incentives under various schemes to farmers in quick way and to ensure transparency in delivery of services, the Department of Agriculture is implementing "Krishi Yojana Apke Dwar" from 2005-06. During the year 2007-08, one camp per Gram Panchayat level will be organized and some special orientation and review camps will also be organized at Division and State level. For this, a sum of Rs. 850.00 lacs is proposed for the XIth plan and Rs. 153.00 lac during 2007-08.
- Agriculture Technological Intensive/Employment Oriented Training of Farmers/ Farmers Groups - A provision of Rs. 30.00 lacs for agriculture technological intensive/employment oriented training of farmers/ farmers groups in Annual Plan 2007-08 and Rs. 150.00 lacs in XI plan have been kept.
- Assistance to NGOs - With commercialization, it is not possible for the Department to undertake all types of agriculture development programme. Therefore, it is proposed to undertake agriculture development programme from state plan funds or to bear administrative cost of NGOs for implementation of ongoing CSSs /State Plan programmes. A sum of Rs. 50.00 lacs and Rs. 10.00 lacs are proposed for XI Five Year and Annual Plan, 2007-08 respectively.

## **Crop & Weather Insurance**

### Crop Insurance

7.25 State Government is implementing the Crop Insurance under NAIS since Kharif, 2003 in the State. A provision of Rs. 220.00 lac is proposed for the year 2007-08 and Rs.1950.00 lacs for XI plan as payment of bank service charges on deposited premium, premium subsidy for small and marginal farmers. Out of Rs. 220.00 lacs provided during 2007-08, an amount of Rs. 60.00 lacs is kept for administrative & operating cost, incentive to the farmers & staff for crop cutting experiments.



## **Agriculture Engineering**

### Distribution of Agriculture Implement/PP Equipments

7.26 For providing support to farmers for popularization of improved & energy efficient farm machinery & PP equipments, a sum of Rs 36.00 lacs for agriculture implements, Rs. 50.00 lacs for plant protection equipments as "differential subsidy of 25%" and Rs. 5.00 lacs for implement testing by third party has been kept for the year 2007-08. An amount of Rs. 820.00 lacs has been proposed for XI Plan for these purposes.

### **Other Expenditure**

7.27 A provision of Rs. 525.00 lac is proposed for the year 2007-08 and Rs. 3315 lacs are kept for XI plan. Sub component wise details are given below:

- Subsidy on Pipe Line - Due to cap on subsidy to farmers, 25% subsidy on water saving devices is being provided to all farmers under the Work Plan. 50% subsidy was provided before this cap to all farmers. The programme has been affected adversely due to this cap on subsidy under Work Plan. A sum of Rs 355.00 lac is proposed during 2007-08 and Rs. 2265.00 lacs are kept for XI plan.
- Land Stock Improvement Reclamation of Saline and Alkali Soil - At present, 25% subsidy is being provided to all farmers for reclamation of saline and alkali soils under Work Plan. The programme has been affected adversely due to cap on subsidy (25%) under Work Plan which was 50% earlier. For Gypsum distribution, to meet the differential subsidy of 25%, a sum of Rs 170.00 lac for 2007-08 and Rs. 1050.00 for XI Plan is kept.

7.28 Innovative Programme - A provision of Rs. 2020.00 lacs has been proposed for XIth Plan out of which Rs 460.00 lacs for Annual Plan 2007-08, for innovative programme and contractual research to meet the requirement of research and extension for specific farming situation, core budget to permit taking up of any new schemes or programmes which are not covered under any of the on going schemes. Out of Rs. 460.00 lacs, Rs. 50.00 lac is proposed for core budget, Rs. 310.00 lac for minikit distribution and Rs. 100.00 lac for R & D support. The funds will also be utilized to take care of some of the recommendations of task force constituted under Prof. M.S. Swaminathan which is to be received soon.

### **Crop Compensation Fund**

7.29 For this purpose, a sum of Rs. 1041.91 lacs has been proposed for Annual Plan 2007-08 and Rs.12432.92 lac for XI Plan.

### **Shifting from Flood Irrigation to Drip Irrigation System**

7.30 A token provision of Rs. 0.03 lac is proposed for the year 2007-08 and Rs 0.15 lac for XI Plan.

### **Innovative Schemes (Gramsat)**

7.31 Satellite Communication based network being installed in the State for facilitating training and extension activities of various departments with connectivity up to Panchayat Samiti level. Science & Technology is nodal department for it, entrusted with responsibility of its operation and maintenance. For this purpose, a token provision of Rs.0.01 lac is being proposed for the year 2007-08. Rs 0.05 lac is kept for XI Plan

### **Rajasthan Mission on Livelihood (RMoL)**

7.32 Rajasthan Mission on Livelihoods has been carrying out various Livelihood Promotion programs in collaboration with Government departments, NGOs, Technical Institutes, and Companies. For increasing employability potential of the unemployed youths in the state, RMoL has been carrying out short duration training programs on 100 skill courses identified. The training programs have been successful in achieving the objective of the program, thus making it imperative to expand the program further in the next financial year. Besides, providing financial assistance for implementing training programs, the programs have been instrumental in building capacities of organization for delivering training programs, building course materials for bringing in standardization all over the state and in inviting training institutes and organizations from other states for providing quality trainings to youths in Rajasthan. A provision of Rs. 860.50 lac is kept for the year 2007-08 for revenue expenditure of RMOL and Rs. 6119.13 lac is kept for XI Plan.

### Capital Expenditure

7.33 Total provision of Rs. 480.00 lac for 2007-08 and Rs.3120.00 lac for XI Plan is proposed under this sector. Sub component wise details are given below:

- Civil Works through Department/RSAMB - During the year 2007-08, a provision of Rs. 25.00 lac has been kept for various ongoing civil works i.e. construction of Kisan Sewa Kendras, general repairs and maintenance of AAO/Agri. Supervisor residence quarters and Rs.208.00 lac for new civil works to be undertaken through RSAMB. It is proposed to construct 150 AAO residence cum office where AAO offices are operating in rented building. It is estimated that cost of construction of one AAO residence cum office comes to Rs. 6.64 lacs. However, for Annual Plan, 2007-08, Rs. 233.00 lacs is proposed and Rs. 2025.00 lac is kept for XI Plan
- Seed Testing Lab - A provision of Rs. 15.00 lac is proposed during 2007-08 for necessary building, instrument/equipments, fencing

& accessories for Seed Testing Lab to create Grow Out Test (GOT) facility. Rs 15.00 lac is kept for XI Plan.

- Quality Control/Pesticide Lab - A provision of Rs. 32.00 lac is proposed during 2007-08 for necessary building, instrument / equipments & accessories for Quality Control Lab. Rs 80.00 lac is kept for XI Plan.
- Mission on Livelihoods - A provision of Rs. 200.00 lac is kept for the year 2007-08 for capital expenditure under RMOL. Rs 1000.00 lac is kept for XI Plan.

### **Funds for PRIs**

7.34 A token provision of Rs 0.03 lac is proposed as grant-in-aid to Panchayati Raj Institutions for the activities transferred for the year 2007-08. Rs 0.15 lac as token provision is kept for XI Plan.

### **HORTICULTURE**

7.35 Rajasthan State is having diverse agro-climatic conditions which favour growing of large number of horticultural crops like fruits, vegetables, spices, flowers and medicinal & aromatic plants through out the year. The Department of Horticulture came into existence in year 1989 with the ultimate objective of harnessing the potential of horticulture in a systematic and planned manner so as to increase area, production and productivity of different horticultural crops and there by to improve nutritional as well as economic status of people of State. During initial years, the horticulture development activities were started in limited areas which picked up well during 8<sup>th</sup> plan when development schemes under Central Sector, ADP and State Plan, were launched together with enhanced financial allocation. As a result, some more areas of the State brought under horticulture and at present a total of 20 districts out of 32 have been covered under Intensive Horticulture Development Programme. In remaining 12 districts, horticulture development activities are being taken up with the help of extension functionaries of Agriculture Department.

#### Review of X Five Year Plan

7.36 During the X Five Year Plan, a financial provision of Rs. 125.58 lacs was made under State Plan for development of horticulture. The total anticipated expenditure during Xth plan is Rs. 969.16 lacs. An innovative scheme on weather insurance has been introduced in X Plan with the objective of protecting the farmers against the risk of aberrant weather condition. During 2004-05, 8460 policies have been issued to the 1817 farmers in Jhalawar, Kota and Baran districts with subsidy upto 50% on the premium. During 2005-06, cumin, methi and kinnow have also been included under weather insurance in which 4701 policies have been issued to the 1488 farmers.

7.37 During the X Plan, reasonable achievements have been made in respect of monitorable targets with the increase in area and production of horticultural crops. Share of spices (Coriander, Cumin & Fenugreek) and medicinal & aromatic plants (Isabgol & Mehandi) production in total production of country has been well recognised and State is also contributing in export. The area and production under most of the horticultural crops have been increased during X Plan which are as under:

(Area in Ha & Production in MT)

S. No	Crop group	Average of IX Plan		Average of X Plan (4 yrs.)	
		Area	Prod.	Area	Prod.
1	Fruits	20785	252059	23517	216523
2	Vegetables	97228	401608	113733	564451
3	Spices	505679	413166	471240	429538
3	Medicinal Crops	128531	78380	157131	83956
4	Flowers	1885	2523	2441	2001
	<b>Total</b>	754108	1147736	768062	1296468

7.38 The reduction in area of spices is mainly because of fewer market prices of cumin and poor rainfall during 2002-03 & 2003-04 which resulted in reduction in area of cumin and other spices.

7.39 During the first four years (2002-03 to 2005-06) of the X plan, Department of Horticulture has implemented the CSS Work Plan scheme with the major thrust on development of Fruits, Spices, Vegetables, Floriculture, and Medicinal & Aromatic plants.

7.40 Government of India has launched two Centrally Sponsored Schemes viz. National Horticulture Mission (NHM) with 100% financial assistance and Micro Irrigation Scheme (MIS) with 80% financial assistance during 2005-06. The programmes of NHM are being executed in the selected 17 districts of the State viz. Jaipur, Ajmer, Alwar, Chittorgarh, Kota, Baran, Jhalawar, Jodhpur, Pali, Jalore, Barmer, Nagaur, Sriganganagar, Tonk, Banswara, Sawai Madhopur and Karauli whereas MIS is being implemented in all the 32 districts.

7.41 The NHM and MIS are implemented through District Horticulture Development Society under the chairmanship of District Collector. The funds are directly made available to the district level society.

7.42 Although, the NHM has emphasized the need for Development of Horticulture in the State but in present context, when this sector has got prominent place in over all scenario of Agriculture and offering vast options for diversification, some more policy related issues are required to be addressed properly so that the huge existing potential of the state for horticulture could be harnessed and converted in production. Horticultural produce especially vegetables, fruits & flowers being

perishable in nature, requires immediate marketing. Therefore, this aspect needs very serious endeavors for its quick disposal at remunerative prices in the domestic as well as overseas market. Appropriate steps should be taken in this direction to protect the interest of farmers.

### **Goals / Objectives of XI Five Year Plan**

7.43 To boost up production and productivity of different horticultural crops in the state and overall development of this sector, following objectives and priorities have been identified:

- Production of quality planting material to fulfill the demand of state.
- Promotion of drip irrigation system and low water requiring crops.
- Promotion of high value vegetables, flowers and aromatic crops.
- Organic farming of fruits, vegetables and spices
- Promotion of rain water harvesting structures for irrigation.
- Production tie up and buy back arrangement through contract farming.
- Involvement of private sector in the field of seed production, post harvest management and marketing of horticulture produce.

### **Steps to be taken to encourage Public-Private Partnership**

7.44 Horticulture sector is such a vast sector where different activities could be promoted through leveraging the resources of Public sector along with the Government Sector. Some of the identified sectors are as under:

- Production of quality homogeneous planting material through tissue culture techniques in large scale.
- Large scale production of certified/ quality vegetables and flower seed/ seedlings.
- Organic production of spices and vegetables and its certification.
- Management of post harvest- collection, grading, sorting and marketing.
- Commercialization of protected cultivation under green house condition.

### **Production targets for XI Plan**

7.45 Keeping in view the untapped potential of the Horticulture development in the State, Department have set the landmarks of area and production of different Horticulture crops, which is to be achieved in the years to come. Taking the area during IX plan as a benchmark, the

goal for increasing area, production and productivity up to 2011-12 are as under:

(Area in ha, production in MT and productivity in MT/Ha)

S. No	Crops	Average of IX Plan			Target for 2011-12		
		Area	Prod.	Yield	Area	Prod.	Yield
1	Fruits	20785	252059	12.13	55000	742500	13.50
2	Vegetables	97228	401608	4.13	202000	1151400	5.70
3	Spices	505679	413166	0.82	900000	855000	0.95
4	Medicinal	128531	78380	0.61	214000	158360	0.74
5	Flowers	1885	2523	1.34	5400	9180	1.70
	<b>Total</b>	<b>754108</b>	<b>1147736</b>	<b>1.52</b>	<b>1376400</b>	<b>2916440</b>	<b>2.12</b>

7.46 A provision of Rs.10500.00 lacs has been proposed for XIth Plan out of which Rs. 1297.00 lacs for annual plan 2007-08. The scheme wise proposed outlay are as under: -

(Rs. in lacs)

Item	Proposed outlay	
	Annual Plan 2007-08	Eleventh Plan 2007-12
State Plan Schemes	372.00	2650.00
National Horticulture Mission (15% state share)	200.00	3850.00
Micro Irrigation Scheme (20% state share)	725.00	4000.00
<b>Total</b>	<b>1297.00</b>	<b>10500.00</b>

### State Plan Schemes

- Establishment of Fruit Orchards - In order to promote the diversification of agriculture for sustainability, new plantations of pomegranate, Kinnow, Bael, Lime, Guava, Mandarain, Custard Apple, Mango, Ber & Aonla etc. would be taken up in identified clusters in the non NHM districts. The fruits which are not included in NHM may also be taken up in the NHM district. The assistance would be provided @ Rs. 7500 per ha. A provision of Rs 1200.00 lacs has been proposed for XIth Plan, out of which Rs. 165.00 lacs for Annual Plan 2007-08 for fruit plantation in 16000 and 2200 ha. respectively.
- Vegetable Demonstration - In order to propagate production technology of horticultural crop, demonstration of vegetables and high value crops with the high yielding varieties would be laid out with the 50% assistance or maximum of Rs.1000/ per demonstration. The size of demonstration plot may be varying from 0.1 to 0.5 ha depending upon the cost of seed and inputs of particular crop. A provision of Rs. 250.00 lacs has been proposed for XIth Plan, out of which Rs. 40.00 lacs for Annual Plan 2007-08 for laying out 25000 and 400 nos. of vegetable demonstrations.

- Weather Insurance - To provide an insurance cover to horticultural crops against aberrant weather conditions, it is proposed to support weather insurance scheme for horticultural crops. The 33.33% assistance would be given to the farmers on premium amount of insurance policy. A provision of Rs. 100.00 lacs has been proposed for XIth Plan, out of which Rs. 10.00 lacs for Annual Plan 2007-08 for premium subsidy.
- Post Harvest Management - Horticultural crops are perishable in nature as a result of which about 30 % losses occurs after its harvesting due to poor post harvest practices. Therefore it is proposed to provide financial assistance @ 50% of the capital cost of project subject to maximum of Rs. 5.00 lacs per unit for setting up of pack houses & processing units and packing material etc for reducing the post harvest losses and for fetching better market prices. A provision of Rs.150.00 lacs has been proposed for XIth Plan, out of which Rs. 15.00 lacs for Annual Plan 2007-08 for subsidy on PHM.
- Differential Subsidy for Establishment of Green House - For growing off season vegetables seedlings and other horticultural crops under controlled atmospheric conditions of green house, 33% subsidy is provided to general farmers and 50% to small/ marginal farmers under National Horticulture Mission. This technology is not getting momentum due to high cost involvement. So that, differential subsidy @ 17% for general farmers and 25% for small/ marginal farmers would be provided for green house which are to be established under NHM. A provision of Rs 100.00 lacs has been proposed for XIth Plan, out of which Rs. 15.00 lacs for Annual Plan 2007-08 for differential subsidy.
- Innovative Schemes - As the department is implementing different horticultural development schemes in the State but some times, specific need based schemes are also required to planned and implemented in the field with the 50% assistance to farmers. A provision of Rs. 100.00 lacs has been proposed for XIth Plan, out of which Rs. 10.00 lacs for Annual Plan 2007-08 for innovative schemes.
- Research & Development - To enhance the productivity level of different horticultural crops and better Post Harvest Management, the need based research work would be conducted on state agricultural universities and adaptive trial centers of department. Assistance would also be provided to develop protocols and for production of homogeneous disease free planting material of horticultural crops and for running / establishment of Tissue Culture Lab/ Phytosanitary Lab. A provision of Rs.75.00 lacs has

been proposed for XIth Plan out of which Rs. 15.00 lacs for Annual Plan 2007-08 for research and development.

- Setting of Vermi Compost Units - Keeping in view the side effect of residue of chemicals and fertilizers on human health, it is required to promote the cultivation of organic produce through motivating farmers and providing assistance for production of organic input vermi compost. For this purpose assistance may be given @ Rs. 2500/- for establishing vermi compost unit at farmer's field. A provision of Rs. 100.00 lacs has been proposed for XIth Plan, out of which Rs. 15.00 lacs for Annual Plan 2007-08 for setting of 4000 and 600 vermi compost units respectively.
- Dry Land Horticulture on Farmer's Field - Collection of rainwater by diverting the flow of runoff from part of field in cemented structure for recycling in fruit production may be the best approach for development of horticulture in the rain fed area of the State. For the purpose, it is proposed to assist the farmers @ Rs. 30000/- or 50% of the cost of construction of cemented water harvesting structure. During the XI Five Year Plan (2007-12) and Annual Plan (2007-08), an outlay of Rs. 150.00 lacs and Rs. 24.00 lacs has been proposed for construction of 500 and 80 Nos. of water harvesting structures respectively.
- Demonstration of Medicinal and Aromatic Crops - Under this scheme demonstration of different medicinal & aromatic crops like Sonamukhi, Isabgol, Ashwagandha, Khus, Mehandi etc. would be laid out at farmer's field to create awareness of the crops among the farmers. A financial assistance of Rs. 1500 or 50% of cost of inputs per demonstration (0.01 to 1 ha) will be provided to the farmers in the form of critical inputs like seed/ planting material, fertilizer, P.P. chemical etc. During the XI Five Year Plan (2007-12) and Annual Plan (2007-08), an outlay of Rs. 75.00 lacs and Rs. 15.00 lacs has been proposed for laying out 5000 and 1000 Nos. of demonstration respectively.
- Publicity and Media Support - For organization of farmers fair, exhibition, seminar, workshop, printing of literature, running & maintenance of computer, printer and photocopiers, and bearing cost of NIT, AMC, minor repair and purchase of raw materials thereof an outlay of Rs. 150.00 lacs and Rs. 20.00 lacs has been proposed for XI Five Year Plan (2007-12) and Annual Plan (2007-08) respectively.
- Revitalization and Development - For minor repair, maintenance, sanitary fitting, partitioning, floor mating etc. in the departmental buildings, an outlay of Rs. 50.00 lacs and Rs. 10.00 lacs has been proposed for XI Five Year Plan (2007-12) and Annual Plan (2007-08) respectively.



- Assistance on P.P. Measures - The prophylactic / control plant protection measures for the horticulture crops such as fruits, vegetables, spices, medicinal and aromatic plants, flowers, betel vine etc. are quite important, but it involve high expenditure. As such 50% assistance on the cost of pesticide up to maximum of Rs. 500/- per ha, is proposed under this programme. For the XI Five Year Plan (2007-12) and Annual Plan (2007-08) an outlay of Rs150.00 lacs and Rs. 18.00 lacs has been proposed to provide assistance for plant protection measures in 30000 and 3600 ha respectively.

#### **Matching Share for National Horticulture Mission**

7.47 National Horticulture Mission has been launched by GOI from the year 2005-06 with 100% assistance. From the year 2007-08, 15% matching share is required from the State Plan. A provision of Rs. 3850.00 lacs has been proposed for XIth Plan, out of which Rs. 200.00 lacs for Annual Plan 2007-08 for state matching share.

#### **Matching Share for Micro Irrigation Scheme**

7.48 Government of India have launched micro irrigation scheme with the 50% financial assistance to the farmers. As per guidelines of micro irrigation scheme, State Government will share the 20% amount of subsidy. The MIS includes two components viz. sprinkler and drip system of irrigation. A provision of Rs. 4000.00 lacs has been proposed for XIth Plan, out of which Rs. 725.00 lacs for Annual Plan 2007-08 for state matching share of MIS.

#### **RAJASTHAN STATE WAREHOUSING CORPORATION**

7.49 Rajasthan State Warehousing Corporation (RSWC) is a Government undertaking. The main objective of the Corporation is to construct godowns and warehouses in the State for scientific storage of agricultural produce, fertilizer, seeds and other notified commodities.

7.50 A provision of Rs.1635.00 lacs has been proposed for XIth Plan out of which Rs. 270.00 lacs for Annual Plan 2007-08.

#### **WATERSHED DEVELOPMENT & SOIL CONSERVATION**

7.51 Soil erosion is the most serious and widely prevalent threat to productive land in the State. Productive land is a source of human sustenance and security. It is a non-renewable resource which provides the essential social environment in terms of shelter, roads and other land based facilities. Soil in Rajasthan are also subject to heavy moisture loss by quick evaporation. Uncontrolled run off not only result in loss of water and good top soils, but also in loss of valuable soil nutrient. Adopting appropriate soil & water conservation measures can considerably increase fertility of soil in rainfed areas.

7.52 With the establishment of Watershed Development & Soil Conservation Department in 1991, Rajasthan has been making rapid strides in development of participative, replicable, sustainable, ecological & low cost resource management for Watershed Development & Soil conservation, Management of Common Property Resources by elected User Committees and introduction of Gopals for the live stock development. These have been Rajasthan's innovations in development of rainfed agriculture in the country. The approach adopted has interested several international agencies.

7.53 Empowerment of User Committee had been a major thrust area since 1995-96. In this approach instead of getting works executed through the Government machinery, a committee of the beneficiaries executes the developmental works. These committees are popularly known as Users Committees. The User Committee is elected in general meeting of the village community and is responsible for finding solutions of problems through interaction with Government officials. Presently there are about 15000 Users Committee functioning in the State. The department now has also operationalised bank accounts of User Committee and all payments are cleared through bearer cheques to avoid any misunderstanding.

#### Review of Tenth Plan 2002-07 for NWDPR

7.54 During Xth FYP 2002-07, a total provision of Rs. 24090.60 lakhs for NWDPR work plan was kept with physical target of 5.46 lac ha. A sum of Rs. 16351.60 lakhs has been spent till March, 06 with a benefited area of 3.17 lac ha. This includes 90% CSS and 10% state share .

7.55 For the year 2006-07, a sum of Rs.5520.81 lakhs has been kept targeting to treat an area of 1.42 lac ha. All the 1138 watersheds will be saturated by March, 07.

7.56 The state of Rajasthan has been awarded by India Tech Foundation Mumbai as best state in the country in the field of rural infrastructure development sector in the year 2004 based on the case study of Mangliyawas watershed, district Ajmer.

#### **Objectives for the XIth Plan**

- Conservation, upgradation and utilisation of natural endowment in an integral manner. Perpetual availability of food, fodder, timber and other bio mass to meet growing demand of human & live stock population in the rural areas.
- Generation of massive employment during and after project completion.
- In-situ moisture conservation to ensure availability of water.
- Reduction of inequality between irrigated and rainfed areas.

- Development of a natural resources base, sustainable productivity and to improve the well being of millions of poor farmers and landless labourers, to endeavour restoration of ecological balance and to arrest & revise the process of environmental degradation by soil & moisture conservation in an integrated manner.
- To encourage people as well as involvement of Non Governmental Organisations.

### **Eleventh Five Year Plan (2007-12)**

7.57 During the XIth Five Year Plan period, Rs. 397.05 lacs has been proposed for various schemes of Watershed Development & Soil Conservation including soil conservation through Forest Department and Rs. 47.01 lacs for Annual Plan 2007-08. The scheme wise details are as under:-

#### **Watershed Development & Soil Conservation Department**

7.58 A provision of Rs.87.05 lacs has been proposed for XIth Plan out of which Rs. 7.01 lacs for Annual Plan 2007-08. The scheme wise details are as under:-

#### **Construction of office building**

7.59 For completion of Jt. Director Office, Kota building, a provision of Rs.7.55 lacs has been proposed for XIth Plan out of which Rs. 2.00 lacs for Annual Plan 2007-08 as committed liabilities.

#### **New Schemes**

##### Gender budgeting with special reference to Women members of WDTs

7.60 Implementation of Watershed Projects is being carried out by Panchayati Raj Institutions. Responsibility of Project Implementation Agency (PIA) has been entrusted to Panchayat Samities whereas execution of project works is being carried out by Gram Panchayats.

7.61 As per guidelines, PIAs discharge its duties through a team called "Watershed Development Team (WDT)" which has minimum four members of different disciplines viz. Engineering/Agriculture Scientist/ Veterinarian/Social Scientist. These members have been assigned joint as well as individual responsibility to carry out day - to - day work by helping / guiding Gram Panchayats.

7.62 One of the members of WDT is a woman. Social Scientist (Woman) included in WDT plays an important role in organising community, generating awareness and feeling to own the programme. Thus, the role of social scientist is self evident.

7.63 A provision of Rs 7.50 lacs has been proposed for XIth Plan, out of which Rs. 1.50 lacs for Annual Plan 2007-08 for training of women social scientist.

### Purchase of new vehicle

7.64 Conditions of vehicles in the department are not good. They are out-dated models. Therefore, for purchase of new vehicles, a provision of Rs. 12.00 lacs has been proposed during the XIth Plan. No provision has been kept during Annual Plan 2007-08.

### Media Publicity

7.65 Watershed programme is peoples programme and hence awareness among community, their capacity building, exposures, experience sharing etc. play an important role in making it a participatory programme. Though awareness generation is one of the major thrust area of watershed programmes but so far no budget is available at Directorate for this key activity. There is an urgent and inevitable need for strengthening awareness and publicity of watershed development activities through print and electronic media to let people know the immense utility of such activities in rural areas.

7.66 A provision of Rs.25.00 lacs has been proposed for XIth Plan out of which Rs. 1.00 lacs for Annual Plan 2007-08 for the purpose of Media Publicity.

### **Community participation & public private participation**

7.67 Watershed projects under different programmes are being implemented in the State as per Government of India guidelines. The concerning line departments earlier implemented these programmes. In the changed scenario, the responsibility of implementation has been entrusted to PRI's, so that the community could be effectively involved in planning, implementation and post project management.

- To develop a Model Watershed Project in each of the nine agro-climatic zones in the State, a need is felt to involve reputed lead NGOs.

7.68 Participatory Rural Appraisal (PRA) is one of the most important exercises in watershed development projects before finalising action plans. Thus, involvement of community is of paramount importance. Services of reputed NGOs having proven creditability and those who have worked in this field, can be taken to ensure public private participation in an effective and result oriented manner.

7.69 A provision of Rs.34.95 lacs has been proposed for XIth Plan out of which Rs. 2.50 lacs for Annual Plan 2007-08

### **Special New Watershed Development Projects**

7.70 Provision of Rs.0.05 lacs has been kept for XIth Plan and Rs. 0.01 lacs for Annual Plan 2007-08 as token provision.

### **Soil Conservation through Forest Department**

7.71 In this sector, the main focus is on carrying out soil and water conservation works for erosion prone sites and also to stabilize the soil by

providing necessary soil cover. In the Eleventh Plan, an amount of Rs.310 lakhs has been proposed, while the amount proposed for Annual Plan 2007-08 is Rs. 40.00 lakhs. The break up of allocated amount for various schemes is as under : -

(Rs. in lacs)

S. No.	Name of Scheme	Outlay XIth Plan	Outlay Annual Plan
1	Soil Conservation in Hilly & Ravine Area	280.00	34.40
2	Corpus Fund	30.00	5.60
	<b>Total</b>	<b>310.00</b>	<b>40.00</b>

### **Soil Conservation in Hilly & Ravenous Areas**

7.72 Under this scheme, soil and Water Conservation Works are being executed on priority in such hilly and ravenous areas which are more susceptible to soil erosion. The works, which will be taken up, are construction of check dams, contour trenches, earthen bunds (in case of ravines) and planting and sowing of soil binding species. In the Eleventh Plan, an amount of Rs. 280.00 lakhs has been proposed while the amount proposed for Annual Plan 2007-08 is Rs. 34.40 lakhs with this amount, soil and water conservation works shall be taken up over 1200 hectares, including 200 ha. plantation in the year 2007-08.

### **Corpus Funds**

7.73 The Centrally Sponsored Schemes of soil conservation in the catchments of River Valleys of Chambal, Mahi, Dantiwara and Banas are being implemented with assistance from Government of India. For the maintenance of assets created under these schemes as per the guidelines, an amount of Rs. 30.00 lakhs has been proposed for Eleventh Plan and Rs.5.60 lakhs for Annual Plan 2007-08.

### **WORK PLAN**

7.74 Although no indication has been given by GOI regarding Macro Management Work Plan Scheme for XIth Plan and Annual Plan 2007-08. A provision of Rs.7000.00 lacs has been proposed for XIth Plan, out of which Rs. 1200.00 lacs for Annual Plan 2007-08 for state matching share.