

CHAPTER - 7

AGRICULTURE PRODUCTION

7.1 Rajasthan, the largest State in India is spread over an area of 3.42 lac sq. km, which is 10% of the area of the country. The State's population as per the census of 2001 was 56 million, which is 5.5% of Country's population. 77% of State's population resides in the rural areas.

7.2 The State's economy has undergone a considerable transformation in the recent past with growth of manufacturing and services sectors. However, agriculture, with over 60% of the State's population dependant on it, continues to play an important role. Agriculture, including animal husbandry, contributes about one fourth to the State's Gross Domestic Product. Growth of the agriculture sector therefore has an important impact on State's economic performance and more importantly on the lives of people dependent on agriculture.

7.3 The State has 342.66 lac hectare of area reported for land utilization purpose. Out of this, 7.76% (26.60 lac hectare) is under forest cover and 12.43% (42.59 lac hectare) is not available for cultivation consisting of 5.14% (17.60 lac hectare) under non-agricultural usage and 7.29% (24.98 lac hectare) of barren and uncultivated land. Fallow land is estimated 10.75% (36.82 lac hectare) which includes 3.72% (12.75 lac hectare) current fallow and 7.02% (24.07 lac hectare) other fallow land. Other uncultivated lands excluding fallow land is estimated 18.35% (62.69 lac hectare) which includes 4.98% (17.08 lac hectare) under permanent pastures and grazing land, 0.04% (0.14 lac hectare) under miscellaneous tree crops and grooves and 13.27% (45.46 lac hectare) of culturable waste lands. Estimated net sown area is 50.76% (173.94 lac hectare) and the gross cropped area is 216.64 lac hectares.

7.4 Average farm size in Rajasthan is 3.96 ha, and total number of land holdings is 5.36 million. Small and marginal holders represent one-half of the total number of farm households, but they share just 16% of the cultivated land. The rain-fed crops on which they are so dependent were grown in an extremely hostile agro-climatic environment, with temperatures varying from a minimum of 5°C to a maximum of 45°C and more. Rainfall variations are large, both in space and in time, with annual precipitation ranging from 15 to 90 cm in different parts of the State.

7.5 While the State has over 10% of the country's geographical area, 5% of its population and 13% of the area under cultivation, it has only less than 1% share in the water resources. Water, clearly, is State's most precious resource. In absence of perennial sources, there has been overdependence over ground water, leading to mining of water in many

parts of the State. Besides its quantity, the quality of water is another major concern. It is, therefore, not surprising that only about one third of the cropped area of 2 million hectares is under irrigation. What is even more disconcerting is that nearly two thirds of the irrigated area is dependent on underground water from wells and tube wells. Most of the area irrigated by the canal system is in the northern part of the State where the Indira Gandhi Nahar Project (IGNP), Gang and Bhakra Canals systems irrigate more than 1.2 million hectares. In recent years, reduction in the availability of water in the reservoirs has resulted in either reduction in the cropped area or damage to crops, sometimes leading to agitation by farmers.

7.6 In view of the rather limited water resources and the surface water resources mostly confined to some parts of the State, agriculture is primarily rain fed. Arid and semi-arid areas cover two third area of the state. Due to State's geographical location, it receives monsoon at the end and, hence, the period of monsoon is short, around three months only. The State faces late onset and early withdrawal of monsoon. Ninety per cent of the rainfall received during monsoon season. Sustaining and in fact increasing agricultural production in the face of poor monsoon and limited water resources is a major challenge.

7.7 For increasing the agricultural productivity and production, proper management and availability of agricultural inputs including seeds are important. Distributions of improved seeds are mainly through Rajasthan Seeds Development Corporation, National Seeds Corporation and other private dealers. Other inputs like fertilizers distributed largely through a network of PACs, IFFCO, KRIBHCO and other private dealers. Under the agriculture extension and input management programmes, various measures undertaken to reduce the adverse affect of erratic monsoon and hostile weather conditions on agriculture production.

7.8 Over the past decade, the Government of Rajasthan (GOR) has made concerted efforts to systematically develop horticulture in the state. This has resulted in development of certain belts of horticulture crops. The varied agro climatic conditions and soils in the state make it suitable for growing a wide range of fruits like ber, pomegranate, citrus, aonla, mango, papaya, custard-apple, etc. Besides, cultivation of seasonal vegetables; medicinal and aromatic plants like Isabgol, mehandi, senna, etc., spices like cumin, methi, coriander, chillies, ajwain, ginger garlic, etc., betel vine; flowers like rose and jasmine and oil yielding plants like jajoba, castor, Jatropha, etc., offer opportunities for much desired diversification in agriculture through a balanced use of land, water and other resources for promoting sustainable agriculture besides increasing the income of the farmers by raising high value crops.

7.9 Some of the main challenges before agriculture sector are:

- To achieve a higher growth rate and stability in the face of recurrent droughts and rapidly declining water table.
- To increase levels of investment, particularly private, in the agriculture sector for modernization, diversification and commercialization.
- To achieve coordinated development of agriculture and livestock for maximizing benefits to farmers. Fodder availability and development of a dairy network hold the key to a vibrant livestock sector.
- To modernize agriculture markets to ensure better realization for the producer and availability of produce to buyers and for stimulating diversification agriculture.
- To encourage setting up of agro-processing and agri-businesses enterprises for value addition in agriculture produce and generating new employment opportunities.

7.10 In view of the geographical location and size of the State, dependence of its economy on agriculture is unlikely to reduce significantly in the near future and, therefore, stimulating the growth of the agriculture sector is not a choice but a necessity. The fact that most of the agriculture in Rajasthan is subsistence by nature is reflective of the potential that exists for value addition to agricultural output. Making farming an important instrument of rural prosperity and eradication of poverty can be achieved by concurrent attention to:

- soil health enhancement,
- water conservation and management,
- spread of appropriate technologies for crop, livestock, and integrated farming systems,
- supply of quality inputs at the right time and place at affordable prices,
- farmer friendly credit and insurance systems and, above all,
- opportunities for assured and remunerative marketing.

7.11 Essentially, the challenge before the agriculture sector is to maximize farm income by a coordinated approach focusing on best utilization of the available water with higher productivity, crop diversification, value addition and emphasis on livestock development.

SUCCESS STORIES OF SOME IMPORTANT INTERVENTIONS UNDERTAKEN UNDER RKVY -

7.12 **Programme Golden Rays- Rajasthan 2009-10** (A project implemented in tribal area of Udaipur and Banswara district for enhancement of Maize productivity)

- Udaipur & Banswara have a high population of Tribals.
- Maize is staple food of tribal and its present productivity is 8-10 qtl/ha.
- Comprehensive area approach programme taken up with Monsanto India Ltd. on PPP Mode.
- Hybrid maize seed of 165 MT was distributed to 30449 Tribal farmers in kharif and rabi season.
- Besides, hybrid seed extension support in form of training programme and POP on hybrid maize also provided to cultivators.
- Productivity increased by almost two times even under drought condition in both the districts with productivity ranging to 30-33 qtl/ha in Banswara district
- 157 lac expenditure done on the activity.

7.13 Green Fodder Production Programme

Distribution of 9 lac fodder minikits in Rabi season with the outlay of ₹ 2575 lac

- 5.56 lac minikits of lucern (2 kg per kit) of variety T-9
- 1.20 lac minikits of berseem (3 kg per kit) of varieties Vardan, JB-I, Maskavi, Pusa Jayant,
- 2.26 lac minikits of oats (10 kg per kit) of varieties Kent, OS-6, UPO-94,

Similarly, in zaid 2010, 2.79 lac minikits have been distributed:

- 1.66 lac minikits (4 kg per kit) of multi-cut SSG variety of sorghum
- 1.13 lac minikits of bajra (1 kg each) of variety RAJCO
- 1000 minikits of maize (5 kg each) of variety African Tall
- Area under each minikit was 0.1 ha and was sown in assured irrigated areas.

7.14 Water Management Programme

- Nearly 780 water storage tanks constructed to store irrigation water with the cost of 272 lac to ensure timely irrigation in crops from the stored water.
- 1365 diggies against the target of 1000 diggies constructed in canal command areas with the expenditure of 2047 lac. This help in efficient use of water and timely irrigation from the stored water as per need of the crops particularly in tale end.
- 1420 farm pond (khet-talai) to store rain water were constructed with the expenditure of ₹ 426 lac. This will encourage ground water recharge as well as life saving irrigation to crops.

7.15 Water harvesting structure (Minor Irrigation)

- 37 minor irrigation projects were to be constructed with the outlay of ₹ 7000 lac
- 18 Project completed by March, 2010.
- 23735 ha more area brought under irrigation
- It will help increase 47470 MT agriculture production valued to 7120 lac
- By the storage of water in dams ground water will also be recharged.

7.16 Advance Stocking of DAP by Cooperative Department

- 2.60 lac MT DAP was advanced stock for timely availability fertilizer to the farmers with an out lay of ₹ 2250 lac during 2009-10.

7.17 Community Managed Works

- N.M. Sadguru, a NGO is working on community managed water harvesting structure and lift irrigation in Jhalawar and Banswara district.
- 782 ha area brought under irrigation.
- Benefiting 857 farm families (516 families in Banswara and 341 families in Jhalawar).
- An income of ₹117 lac expected to be generated on tribal farmers' fields.

7.18 Animal Husbandry Department

- 1.35 lac mineral mixture and deworming kits were distributed to dairy farmers in Rabi and 1.27 lac kits were distributed in Kharif to help drought affected cattle population.

7.19 Rajasthan Cooperative Dairy Federation

- 289 Bulk Milk Coolers were installed at various dairy units with an outlay of ₹ 2000 lac.

7.20 Horticulture Department

- 61 community farm ponds were constructed with the expenditure of 610 lac. The stored water will be used in raising orchard and vegetable through drip irrigation in 4 ha area per pond.
- **Promotion of Date Palm in Rajasthan:** Under this proposal, three activities are being undertaken. Firstly the model farm of date palm in 130 ha of Government land are being developed at Jaisalmer and Bikaner districts in continuation to this, date palm plantation are also being developed at farmers' field. For production of tissue culture date palm plants in Rajasthan, a tissue culture laboratory is also being

developed at Jodhpur. The tissue culture date varieties are Barhee, Khunezi, Medjool, Khadrawy, Zahidi and Deglet Noor. For all these purpose, a sum of ₹4659.41 lac have been sanctioned during previous years and out of this funds, a sum of ₹3467.44 lac have been utilized till march 2010.

Special initiatives/ innovations undertaken during 2010-11

7.21 Productivity enhancement initiatives taken by the Department of Agriculture, Rajasthan during Kharif-2010: With a view to enhance Seed Replacement Rate (SRR) and crop productivity through use of quality seeds, Department has taken following major initiatives during Kharif-2010:

- **Implementation of Golden Rays Project** leading to quantum jump in SRR and Farm income:- This programme was first introduced in two tribal districts – Udaipur and Banswara of the State during Kharif-2009 and keeping its success in view, the programme was extended to five districts (Entire Tribal sub plan area) during Kharif-2010 i.e. Udaipur, Banswara, Dungarpur, Pratapgarh & Sirohi. Under this programme, all tribal farmers and non-tribal BPL farmers (**about 7.83 lac**) have been covered and each farmer has been given **5kg** high yielding hybrid seeds of Maize crop along with package of practices free of cost. The Tribal Development Department has also made available fertilizer (free of cost) to the farmers. This programme has been organized through Private sector under PPP mode and adequate technical staff has also been deployed in the districts for technical guidance of the farmers. A total of about 39130.60 qtls maize hybrid seeds have been distributed under this programme. Out of this about 1650qtls seeds have been distributed free of cost by the company under CSR activity.
- **Distribution of hybrid Maize and Bajra seeds to Saharia tribal farmers leading to promotion of farmers' livelihood:-** Under this programme, Saharia tribal farmers (**2950 Nos**) of Shahabad & Kisanganj tehsils of Baran districts have been given Bajra (**1.5kg**) and **Maize (5 kg)** seeds free of cost. A total of **87.50 qtls Maize & 18.0 qtls Bajra seeds** have been distributed to the farmers.
- **Distribution of hybrid Maize seed in Bhilwara & Chittorgarh districts:-** Under this programme, tribal farmers & non-tribal BPL farmers (**29544 Nos**) of MADA notified villages of Bhilwara & Chittorgarh districts have been covered. Each farmer has been given 5kg hybrid seeds of Maize along with package of practices.
- **Bajra hybrid seed distribution in 8 selected districts leading to quantum jump in SRR and productivity in pearl millet:-**This programme is aimed to improve SRR (%) of major Bajra growing districts which are presently having poor SRR. Under this programme 8 districts namely, Barmer, Bikaner, Churu, Jalore, Jhunjhnu,

Jodhpur, Nagaur & Sikar have been selected and small & marginal farmers (**about 1264589 Nos**) have been given **1.5kg (each)** hybrid Bajra seeds free of cost along with package of practices. A total of about **18968.79qtls** seeds have been distributed.

7.22 Water Management :- For optimum utilization of available water, water storage structures like construction of farm ponds, water storage tanks, construction of diggies and pipelines are being promoted under various schemes- (a) diggi cum sprinkler are very beneficial in canal command areas, where canal closure & breakage and under supply of water is a common phenomenon, (b) Water storage tanks become vital in well and tube well irrigated areas where water is drawn from 300-600 feet depth and electricity is in short supply or available during nights, in such cases water storage tanks acts as reservoir for storage of water from wells/ tube wells which ensures as-and-when-irrigation in required quantities, (c) Rain water harvesting structures particularly the farm ponds are useful in run-off water collection during rainy season which is used for life saving irrigation during Kharif when there is long dry spell or normal irrigation in Rabi season.

- **Diggies and diggi cum sprinklers:-** In canal command areas i.e. IGNP, Gang Bhakra and Sidhmukh Nohar Irrigation Project, the diggis are used to store the surplus canal water at the turn of the farmer and used to irrigate the crops through sprinklers when canal is not in operation. This ensures timely irrigation as well as improves water use efficiency by the use of sprinklers in canal areas. The proposed targets for the current FY 2010-11 are 5000 diggies with an outlay of ₹10000.00 lacs.
- The various capacities of diggies are 4 lac litre capacity to 25 lac litre capacity. Under the programme, individual beneficiaries are provided subsidy @ 50 % of the unit cost or ₹ 2,00,000/- per Diggi whichever is less. During 2010-11 so far 5964 administrative sanctions for construction of diggies have been issued and 3497 diggies are under construction and a subsidy of ₹4040.78 lac provided to the farmers upto 15 Dec, 2010.
- **Farm Ponds (Khet Talai earthen):-** In order to ensure life saving irrigation to crops in heavy soil areas, construction of farm ponds is a useful proposition. Construction of farm pond especially in heavy soils of Swai Madhopur, Karoli, Kota, Bundi, Baran, Jhalawar, Tonk, Chittorgarh, Ajmer, and Jaipur districts will be useful for giving one life saving irrigation at critical crop growth stage. The runoff water collected in such farm ponds will not only be utilized for irrigation but also help in recharging the ground water level.
- The proposed targets for the current FY 2010-11 are 1500 Farm ponds with an outlay of ₹ 600.00 lac and these have proven to be very

beneficial. The various sizes of farm ponds which are popular include 25X25X3, 25X25X4, 30X30X3 and 30X30X4 meter.

- Under the programme, individual beneficiaries are provided subsidy @ of 50 % of the unit cost or ₹ 40,000/- per pond whichever is less. During the year 2010-11 so far 1000 administrative sanctions have been issued for construction of farm pond and 970 ponds have been constructed and a subsidy of ₹ 388.25 lac have been provided to the farmers upto 15 Dec., 2010
- **Water Storage Tanks (Jal Hauz cemented):-** Jal hauz ensures 'as and when required' irrigation facility. The water can be stored in these tanks during night when electricity is available and fields can be irrigated during the day as per requirement. Under the programme, individual beneficiaries are provided subsidy @ 50 % of the unit cost or ₹ 50,000/- per tank whichever is less. The size of the tank is 40x30x6 feet (i.e.7200 cu ft having capacity of 2.00 lac litre capacity). The proposed targets for the current FY 2010-11 are 1000 tanks with an outlay of ₹ 500.00 lacs. During the year 2010-11 so far 594 administrative sanctions have been issued and 387 water storage tanks constructed so far and a subsidy of ₹187.97 lac have been provided to the farmers.
- **Pipeline programme:-** Pipelines are very important in minimizing conveyance losses of water from the source to the field. The unlined or Kaccha Irrigation channels cause substantial losses of water through percolation, seepage and weed infestation. To reduce these conveyance losses, subsidy is provided on PVC/H.D.P.E pipelines so that the saved water may irrigate more area. Subsidy is payable @ of ₹ 18.75 per meter of running length of pipe up to maximum length of 800 meter per farmer. The proposed targets under NFSM for the current FY 2010-11 are 5000 km with an outlay of ₹ 937.50 lac and under ISOPOM 3700 km with an outlay of ₹ 700.00 lac totaling to 8700 km with a provision of ₹ 1637.50 lac under both the scheme. During 2010-11 so far 3957 km pipe lines have been laid out with an expenditure of ₹ 764.10 lac upto 15 Dec., 2010.

7.23 Strengthening of soil testing facility on PPP Mode:- The State Department has now soil testing labs in all the 33 districts. To further strengthen soil testing facilities and to provide soil health cards to the farmers the department has gone for PPP wherein private fertilizer companies and NGOs are being involved in running 12 mobile soil testing labs recently sanctioned by Ministry of Agriculture, GOI.

7.24 Promoting Organic Farming:- In view of the large geographical area and lesser application of chemical fertilizers, organic farming has great potential in Rajasthan. A number of private companies are active in the state's agriculture sector. These include organic producers and exporters (Morarka Foundation), brewers developing large-scale barley

cultivation (particularly in Jaipur, Sikar and Kota), onion cultivation using drip irrigation systems (pilot project by Bharti Field Fresh), soybean processors (ITC, using their chaupal model), jojoba plantation (near Bikaner), and aloe vera plantation and processing (by a Mumbai-based company in Jodhpur district).

7.25 Promoting Olive Cultivation:- The State has taken a major initiative in further diversification of the agriculture sector with the experimental plantation of olives in the State. The State Government, through the Rajasthan State Agricultural Marketing Board, is participating in a joint venture Company, namely Rajasthan Olive Cultivation Ltd. The Company has undertaken plantation over 180 hectares of Government land which has been leased by the State Government. 52000 saplings of nine olive varieties were procured from Israel and planted after acclimatization. The results have been very encouraging and flowering and fruit setting has been reported at 5 locations. These plantations are being closely monitored and attended by Israeli experts. The State intends taking up olive plantation over farmers' field from next year.

Research and Education

7.26 Swami Keshwanand Rajasthan Agricultural University, Bikaner is addressing critical issues of the farmers for sustainable development of agriculture in the state through 36 All India Coordinated Research Projects with a contingent of 172 scientists working at 7 Research Stations and 8 Research Sub-Stations covering 7 agro-climatic zones spread over 21 districts of the state. Development of improved varieties having quality traits are of paramount importance for enhancing crop production. In this direction 3 high yielding varieties have been developed and notified during the year 2009 by Government of India for commercial cultivation by the farmers. These include one each of Sesame (RT 346), Cluster bean (RGC 1038) and Grain Amaranth (RMA 4). Sesame variety RT 346 has shiny white seed with 50% oil content, while cluster bean variety RGC 1038 is medium in duration with 28-32% gum content, having yield advantage over prevailing varieties. Grain Amaranth variety RMA 4 is a new crop in the state adding towards crop diversity. It contains 12.6% protein, 5-10% lysine and 61.10% starch. Besides, these, 11 varieties of different crops have been identified for release and notification. These are two varieties of groundnut (RG 425 and HNG 69) and one variety each of pearl millet (RHB 173), coriander (RCr 728), wheat (Raj. 4079), chickpea (RSG 974), cluster bean (RGC 1033), onion (RO 252), isabgol (RI 1), fennel (RF 205) and fenugreek (RMt 361).

7.27 During the reporting year 81 production and protection technologies have been developed to ensure higher crop production in the state for diverse agro-climatic conditions. Looking to the scarcities of water in the state efficient drip irrigation schedule has been worked out for castor in

Mandor-Jodhpur region and sugarcane in Ganganagar region. Sprinkler irrigation schedule has been recommended for groundnut in Durgapura-Jaipur region. To ensure environmental sanitation, enhance soil health and produce good quality crop, fertilization packages have been developed through organic means for vegetables, seed spices and medicinal crops viz., tomato, brinjal, coriander, fennel, cumin, fenugreek and isabgol. In Fatehpur region foliar spray of 0.2% zinc sulphate along with 100 ppm ascorbic acid at vegetative and flowering stages helped to avoid stress in mustard. At the same time foliar spray of 0.2% ferrous sulphate along with 0.1% citric acid at vegetative and flowering was helpful to alleviate stress in cluster bean. Cultural practices like wider row spacing and in-situ moisture conservation through making of ridge and furrow was found effective in improving sesame yield. Further compaction after sowing of kharif pulses was found effective for ensuring higher seedling establishment. To improve fertilizer use efficiency and saving of costly fertilizer input based on targeted yield recommendations have been given for groundnut and pearl millet.

7.28 Quality seeds of high yielding varieties unquestionably constitute the mortar for productive agriculture. The university has strengthened the National Seed Project with the support of ICAR and thus, ensured a quantum jump in breeder seed production. During 2008-09, 9866 q of breeder seed was produced. For further strengthening of seed production, the university has initiated farmers' participatory seed production programme.

7.29 During 2009, 5 new adhoc projects with total budget of ₹ 433 lac have been sanctioned by different funding agencies. Looking the hostile climate in the state and higher income from vegetables and cauliflowers the project entitled "Standardization and commercialization of protected cultivation technology of high value vegetable and cut flower for enhanced income and employment" with a budget outlay of ₹ 99.04 lac has been sanctioned by NAIP (ICAR), New Delhi at ARS, Durgapura-Jaipur. Terminal heat stress in rabi crops, particularly wheat has come out to be a limitation in achieving higher yield. A project entitled "Bio-prospecting of genes and allele mining for abiotic stress tolerance" with a budget of ₹ 109 lac from NAIP (ICAR), New Delhi has been in operation at Plant Biotechnology Centre for elimination of heat stress in wheat. The project is aimed to addressing abiotic stresses with special reference to heat stress in wheat using molecular genetics tools. Similarly another project on "Studies on heat-tolerance in wheat under warm climate" at Directorate of Research under RKVY has been sanctioned with budget outlay of ₹ 79 lac. Quality seed of vegetables are in great demand in the state. For boosting the production of highly profitable vegetables a project entitled "Strategy for production of quality seed of vegetables under arid conditions of Rajasthan" at Directorate of Research, Bikaner with a budget head of ₹ 135.1 lac.

7.30 Realizing the importance of water in the state one workshop on "Developing techniques on water use efficiency and water conservation" was organized on 10 - 11 February, 2010 at ARS, Bikaner. Annual group meet of AICRP on Pearlmillet at ARS, Mandor-Jodhpur on 19-12 march, 2010 was organized. Another Annual Group Meet on "AICRP on Precision Farming Development Centre" was organized at ARS, Bikaner on 10-11 February, 2010.

7.31 **The 'Maharana Pratap University of Agriculture & Technology' Udaipur** was established by Govt. of Rajasthan in 1999 to deal with the agricultural problems of the farmers of south and south east Rajasthan. The University covers 11 districts of south and south east Rajasthan having 6 Colleges, 7 well established Research Stations and 10 Krishi Vigyan Kendras. The University inherited 4 Colleges namely Rajasthan College of Agriculture, College of Technology and Engineering, College of Home Science, College of Dairy and Food Science Technology while two colleges i.e., College of Horticulture and Forestry, Jhalawar and College of Fisheries, Udaipur were opened in year 2004 & 2010 respectively.

7.32 **Activities of the Institution**

After establishment of Maharana Pratap University of Agriculture & Technology, Udaipur an excellent work has been done with respect to teaching, research and extension in the field of Agriculture. The University has produced more than 5000 graduates, post graduates & Ph.Ds in agriculture faculty including foreign students from various Asian and African countries. This year (2010-11) the University has enrolled 2667 students. In the field of research more than 30 short duration, moisture stress resistant high yielding varieties of different crops like maize, sorghum, soybean, gram, etc. are released. While three nationally and internationally known journals are also published by the University. The University is pioneer researcher in the field of renewable energy sources and farm machinery. University also has strengthened high tech horticulture and has released and transmitted to farmers the latest production technologies for guava, mango, aonla and vegetables. The University has utilized its network on extension activities to disseminate the above research and technologies amongst farmers through 10 Krishi Vigyan Kendras established at different district head quarters.

Live Stock Research Station :

- 1 Livestock Research Station, Vallabhnagar. This unit has become a constituent of new RAJUVAS, Bikaner from 13.05.2010.

College of Veterinary & Animal Science, Navania, Vallabhnagar, liability of following AICRP schemes (Buffalo and Goat) have been incorporated upto 30.09.2010 for the current financial year 2010-11.

7.33 An outlay of ₹ 855.75 lac and ₹420.48 lac has been proposed for the Swami Keshwanand Rajasthan Agricultural University, Bikaner and Maharana Pratap University of Agriculture & Technology, Udaipur respectively for the Annual Plan 2011-12.

DEPARTMENT OF AGRICULTURE

7.34 A near total stagnation in overall growth performance of agriculture and allied sectors in India since the mid 1990s has been a matter of concern for policy makers. On having realized the importance of agriculture as prime mover of macro economic growth in the country as well as an inevitable element to make growth inclusive, the Approach paper to the 11th Five Year Plan has suggested a road map for 4% growth rate per annum for the agriculture and allied sector to attain the long run goal of 9% growth for the economy.

7.35 Accordingly, to accelerate growth of Agriculture on sustainable basis following goals have been set for betterment of farming communities:-

- Higher levels of Farm Income.
- Optimum utilization of resources – land, water & technology.
- Equity & Sustainability.
- Food Security will be ensured- Food security will also include providing nutritional security to meet the requirement of below poverty line (BPL families) at affordable rates besides ensuring food for all sections of society.

7.36 To achieve the above objectives sum of ₹19204.51 lac (including Work Plan provision of ₹ 200.00 lac) has been kept for Annual Plan 2011-12. The flow towards capital outlay is ₹ 280.01 lac.

Details of the Programmes Proposed:

Seed Sector:

7.37 Seed is an important component in agriculture development. The total Provision of ₹ 56.85 lac has been kept for the establishment of seed processing plant in private sector and a new provision of contractual staff for seed lab have been kept for seed sector for the year 2011-12. Sub-component wise detail is given below:

- a) **Strengthening/ Operating Cost for Seed Testing Laboratories/ Hybridity Test Lab/ DNA Finger Printing Lab:-** To ensure quality seed distribution, it is necessary to test the seed samples, therefore, operating cost for seed testing labs/ hybridity test lab/ DNA finger printing lab is required. These labs also require some lab articles to strengthen and make them operational. An amount of ₹10.00 lac has been kept for the year 2011-12.
- b) **Establishment of Seed Processing Plants in Private Sector:-** The SRR of most of the crops grown in Rajasthan is dismally low despite

two times increase in availability of improved seed in last two years. The main reason of low SRR is non-availability of good quality seeds, particularly in pulses, (less than 5%) seed spices vegetables. Realizing the need for increased seed production with a view to enhance SRR and in particularly high volume low value crops, private sector involvement is required for boosting seed production. To make greater availability of seeds, a scheme was formulated as CHOKHO BEEJ YOJNA for Promoting Involvement of Private Sector in seed multiplication, it is proposed to be continued during 2011-12, for which ₹ 20.01 lac is proposed for the 2011-12.

- c) **Contractual Staff Cost for Seed Labs and Seed Sample Storage Facilities:-** In past two years DNA finger printing lab and other seed testing facilities including Bt. Cotton testing facilities have been established as per the need of knowing generic purity of seed and testing seed quality. These labs have been strengthened from the funds provided by GOI under **Development and Strengthening of infrastructural facilities for production and distribution of quality seed**. To operationalize and for effective use of these facilities created there is need of contractual hiring of personnel. For this, 6 persons (3 Sr. level Fellows and 3 helpers) would be hired on contractual basis in the two labs of Durgapura, Jaipur and Ganganagar for testing Bt. Cotton. The total requirement of ₹ 6.84 lac. Besides this, for seed sample storage facilities in form of Dehumifiers Temperature Control Devices and Cabinet for Seed Sample Storage would be established in above two labs @ of ₹10.00 lac per lab.

Manures & Fertilizers:

7.38 A provision of ₹432.46 lac is proposed under this sector for the year 2011-12. Sub component wise detail is given below:

- a) **Strengthening & operating cost for Fertilizer Quality Control Laboratories, Soil Testing Labs, Pesticides Residue, Pesticides Testing & Phytosanitary Laboratories:-** ₹ 50.20 lac has been kept in Annual Plan 2011-12 for strengthening & operational cost for Fertilizer Quality Control Lab and Soil Testing Labs along with pesticide residue testing and Phytosanitary laboratories. A provision of ₹106.22 lacs have been proposed for contractual staff for Soil Q.C. & residue labs under state plant for the year 2011-12.
- b) **State Share for new establishment of 2 fertilizer testing labs under CSS – NPSMF:-** In order to promote balance use of fertilizer through providing soil analysis report to the farmers and acquiring quality of fertilizer, GOI has launched a scheme of National Project of Management of Soil Health & Fertility (NPMSHF). The scheme will facilitate and promote integrated nutrient management through judicious use of fertilizer and strengthening of soil testing facilities to

provide soil test base recommendation to farmer to improving soil fertility and economic return of farmer.

c) **State Share for establishment of 14 new Soil Testing Laboratories in PPP Mode under CSS – NPMSHF:-** Under this scheme 10 static soil testing labs and 4 mobile soil testing labs have been approved by GOI. A sum of ₹ 200.00 lac for revenue expenditure has been proposed as state share for the year 2011-12.

i. **Static Soil Testing Labs:-** GOI will provide 50% of the cost to not exceeding to ₹ 30.00 lac for each lab. The cost of one static lab requires more funds than provision of GOI.

ii. **New Mobile Soil Testing Labs:-** In addition to above static soil testing labs, 4 mobile soil testing labs also have been approved by GOI. For each MSTL GOI will provide ₹ 30.00 lac. The difference amount required from State Plan. In this way, under NPMHSF for laboratories ₹ 200.00 lac is proposed as State Matching Share. This will increase the annual testing capacity by 1.25 lac soil sample annually.

d) **Dissemination of village level package of practices (POP):-** In past, Department of Agriculture has conducted intensive soil fertility management through soil testing, soil fertility mapping, preparation of soil health cards and now sufficient information is available for promoting application of nutrients on basis of soil test results. The facilities micro nutrient testing (Zinc, Iron, copper and manganese) has been created in almost all district labs. The department now has following facilities :-

- Soil fertility mapping and Management
- Soil health cards are now available in all villages.
- Fertilizer recommendations can be made on soil test results which are available for cluster of villages.
- The soil fertility survey is now available for 237 blocks

7.39 On basis of data generated, a Geo reference data base Soil fertility GIS maps have been prepared have been linked on DOIT GIS "Vikas Darpan" Website.

7.40 Earlier POP was prepared at agro climatic zone level covering 3-4 districts and the recommendations were same for the entire zone. As fertility status of soil changes due to use of high analysis fertiliser, intensive cropping etc. from block to block hence there is essential to keep proper watch on amount of mining of nutrients besides promoting balance application of nutrients. For regular monitoring of soil fertility fluctuation GPS based fertility survey has its importance, as the data generated can directly be linked with GIS map. Department of Agriculture now proposes to popularize package of practices on village basis as

information is now available for providing information for individual household/farmer. This will help in sites specific recommendations as per the existing soil health condition and shall also help in reducing cost of cultivation through actual based need of nutrient management. For this ₹ 75.00 lac is proposed for GPS instrument, fertility survey and preparation of soil fertility map of Panchayat Samiti wise etc. This intervention in long term will increase the sustainability of the agriculture system of the area.

- e) **Popularizing use Of Bio-Fertilizers:-** A sum of ₹ 1.02 lac has been kept for testing of Bio-fertilizers manufactured by other agencies at state level Rhyzobia Laboratory, at Durgapura, Jaipur for the year 2011-12.

Plant Protection:

7.41 **Eradication of Pests & Diseases in Endemic & Non Endemic Areas:** Pests & diseases infestation occurs in the form of katra, white grub, Tobacco Caterpillar, Semi looper etc. Previously a large amount of funds were provided by the Govt. of India for the eradication of different Pests & Diseases in the field crops. Now the Govt. of India has been advocating IPM technology for the management of Insects/Pests disease. Accordingly, the department is extending the technology among farming community. Though, this activity has been covered under Work Plan but due to cap on subsidy under Work Plan a differential subsidy of 25% is proposed to be given from State Plan budget. Therefore, a sum of ₹35.00 lac has been kept for 2011-12 for eradication of Pests/ Diseases in Endemic/ Non endemic areas by use of PP chemicals.

Commercial Crops:

7.42 **State Matching Share for Centrally Sponsored Schemes:-** For State's matching share towards centrally sponsored schemes, a provision of ₹1921.79 lac has been kept for the year 2011-12. i.e. for Integrated Scheme of Oilseed & Pulses Oilpalm & Maize (ISOPOM) ₹1800.00 lac and for Incentive Cotton Development Programme (ICDP) ₹ 21.77 lac and for Agriculture Technology Management Agency (ATMA) project, a provision of ₹100.02 lac has been kept as State's matching share for the year 2011-12.

Extension & Training:

7.43 A total provision of ₹ 262.00 lac as has been kept under this sector for the year 2011-12. Sub component wise details are given below:

- a) **Training of Staff & Education:-** For the year 2011-12, a provision of ₹ 55.00 lac has been kept for staff training in inter and intra state for developing communication skill, and dissemination of technology, adoption process and capacity building of extension/ research functionaries for effective extension and need based transfer of technology. Funds would also be utilized for organized Workshops/

Seminars / Symposium on specific subject related to Agriculture Department and State Agriculture University.

b) **Demonstration on Organic Farming and Vermiculture:-**

- i. A sum of ₹ 10.00 lac proposed for **FFS based organic farming demonstration**. Organic Farming is becoming increasingly popular and global demand for organic product is growing rapidly. It also helps in sustainable Agriculture, is environmental and takes into account the health concern of the consumers. Research is being carried out by SAU's on development of organic package of practices for different crops under different Agro-climatic conditions since 2006-07 and both SAU's will now provide interim POP to the department. Hence, to popularize organic farming practices among the cultivators it is proposed to lay out demonstration on the cultivators field under the supervision of scientists of SAUs and officers of ATCs, for which assistance will be 50 % of the cost of inputs i.e. organic matter (compost and vermi compost) cost of seed, bio-fertilizers, bio agents, neem based pesticides etc or maximum ₹ 1000/- whichever is less for 0.4 ha per season. On the sides of such demonstration, Farmers Field School (FFS) would also be organized. The demonstration would be laid out on the same site for the minimum period of three years to assess the impact of organic farming practices. There will be 1000 demonstration (Kharif and Rabi) of 0.4 ha each.
- ii. **Promotion of Organic Farming by providing incentive to Registered Organic Growers-** For the promotion of organic farming in the State, incentive will be provided to the registered organic farmers for different crops. The incentive of ₹ 8000/- will be provided to each registered farmer on the basis of evaluation report/ documentation approved by certifying agency. This Incentive may also include fee of registration & certification. Hence, the total amount of ₹ 17.00 lac is proposed for the year 2011-12.

c) **Agriculture Information– Agriculture Technology Dissemination through Mass Media and Printing of Farmers Friendly Literature:-**

A sum of ₹160.00 lac has been kept 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. and agriculture information activities at Panchayat Samities, District, Division and State level, during Annual Plan 2011-12. Apart from these, CDs of Agriculture films, pamphlets, small booklets of agriculture technology, printed material of agriculture technology, AV Aids, Krishi Calendars and Video Films of Latest technology will be made available to field

offices and ATC so that they may disseminate agriculture knowledge to farming community of the State. Repair and Maintenance of existing Audio Visual Equipments, printing machines, printer-cum-Fax and photocopiers machines will be undertaken which are being used for dissemination of technology and extension activities at Headquarter and Field Offices.

- d) **Computerization and Related Communication Exp:-** Agriculture Department is a key department of the State Government and is concerned with the very important task of improving the productivity of the farm sector. Department is working towards to increase efficiency and transparency through IT infrastructure to provide convenient services to farmers, agriculture learner & research holders, companies and department employees. A sum of ₹ 20.00 lac has been kept for maintenance and operational cost for head office and field offices for 2011-12.
- e) **Agriculture Extension Services:-** A provision of ₹ 821.20 lac for annual Plan 2011-12 has been kept for various on going following field extension activities:
- i. **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 State. In Rajasthan, more than 70% of the agricultural operations are performed by farm women. As an effort to have **Gender Responsive Budgeting in Agriculture**, girls would be encouraged by providing incentives to them for taking agriculture subject at Sr. Secondary and College level. A sum of ₹ 250.00 lac has been kept for the year 2011-12. It is proposed to provide incentive to women taking agriculture subject at Sr. Secondary @ ₹ 3000 per year, for graduation level ₹ 5000 for post graduation and Ph.D. level @ ₹ 10000.
 - ii. **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 public buildings due to non-availability of own building; hence, nominal rent @ ₹ 150/- per month per KSK is provided till all the KSK buildings are constructed. A sum of ₹ 15.00 lac has been kept for the year 2011-12.
 - iii. **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 provides 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. The regular system of farmer scientist interaction provides a forum on the spot identification of problems & therefore for suggesting remedial measures the farmers of particular region will be sent to specific locations where any technology is popular among the farmers and also at the zonal agriculture research station. During their visits they will be trained intensively through interaction session and field visit to demonstration site. For Inter & Intra a sum of ₹ 70.00 lac has been kept for 2011-12.

- iv. **Communication & Mobility of Field Staff:** - For effective implementation of agriculture development activities and to facilitate better mobility of field functionaries for effective monitoring a provision of ₹ 70.00 lac has been kept for the year 2011-12.
- v. **Women Empowerment:-** As an effort to have **Gender Responsive Budgeting in Agriculture**, 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 ₹16.20 lac has been kept for the year 2011-12. Besides this, as per policy of women empowerment all seed minikits are provided to women farmers only. Similarly, in other individual beneficiaries scheme where equipments and implements are provided to farmers, major flow is for women farmers.
- vi. **Organization of Camps (Krishi Yojanaen Aapke 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 Yojanaen Aapke Dwar" from 2005-06. This activity has now been institutionalized. For the year 2011-12, such camps at Gram Panchayat level will be organized in rabi season and some special orientation and review camps will also be organized at Division and State level. For this, a sum of ₹ 200.00 lac has been kept for the year 2011-12.
- vii. **Kisan Mahotsav (Krishi Gyan Avam Aadan Shivir):-** A provision of ₹ 200.00 is proposed for the year 2011-12 for Kisan Mahotsav. The campaign is organized in pre Kharif season 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 besides creating awareness among farmers for water conservation and efficient use of water.

Weather based Crop Insurance Scheme (WBCIS):

7.44 The efforts have been made to bring more farmers under the fold of Crop Insurance by introducing a Weather based Crop Insurance Scheme (WBCIS) as announced in the Budget 2010-11 in the entire State. WBCIS is intended to provide insurance protection to the farmers against adverse weather incidence, such as deficit and excess rainfall, high or low temperature, humidity etc. which are deemed to impact adversely the crop production. It has the advantage to settle the claims within shortest possible time. The WBCIS is based on actuarial rates of premium but to make the scheme attractive, premium actually charged from farmers have been restricted to at par with NAIS.

7.45 Crops covered in 2010-11 under WBCIS:

Kharif Season	Rabi Season	Fruits & Vegetable
Bajra	Barley	Kinnow
Black gram	Gram	Aonla
Green gram	Cumin	Tomato
Groundnut	Coriander	Garlic
Jowar	Lentil	Pea
Maize	Methi	Potato
Paddy	Taramira	Chillies
Sesamum	Rape & Mustard	
Soyabean	Ajwain	
Cotton	Wheat	
Moth	Isabgol	
Guar		

7.46 Progress Kharif 2010:

No. of farmers insured	34.58 lac
Area insured	55.65 lac ha.
Sum insured	₹ 266424 lac
Farmers share in premium	₹ 9073 lac
State share for premium subsidy	10255 lac
GOI share for premium subsidy	10255 lac

7.47 State Government is implementing the Crop based Weather Insurance under NAIS in the State. A provision of ₹14469.97 lac is proposed for the year 2011-12.

7.48 Distribution of PP Equipments:- For providing support to farmers for popularization of improved & energy efficient farm machinery & Plant protection equipments, a sum of ₹ 15.03 lac is proposed as "differential subsidy of 25%" for the year 2011-12.

7.49 **Other Expenditure-** A provision of ₹ 510.00 lac is proposed for the year 2011-12. Sub component wise detail is given below:

7.50 **Water Management:** Water Management is a crucial issue not only in well irrigated areas but is also gaining importance in surface areas particularly in command areas of IGNP. With lesser release of water from Punjab (Pong and Bhakra Dam), the timely availability of water has been affected, thereby effecting the timely release of water in IGNP areas of Ganganagar, Bikaner and Hanumangarh district. Construction of Diggies (Water Storage Tank) in canal command areas on individual farmer's field is gaining importance for providing timely irrigation at critical crop growth stages. By storing water in these diggies on their turn, the farmer can provide irrigation as per need of the crop resulting in efficient use of water. Drips and Sprinklers can also be installed on these diggies for water saving and also increasing area under cultivation. Besides crops, horticultural crops/ orchards can also be taken up with diggi cum sprinkler/ drip modal. Under differential subsidy of rain gun/ pipe line has been proposed for ₹ 10.00 lacs for the yar 2011-12.

7.51 **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 distribution to meet the deferential subsidy of 25% and for advance stocking of gypsum, a sum of ₹10.00 lac are proposed for 2011-12 along with to enhance the green manuring by dhaincha seed distribution for the year 2011-12.

7.52 **Innovative Programme:** ₹ 30.00 lac for 2011-12 is kept for Innovative programmes 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.

7.53 **Minikit Distribution-** As an effort to have **Gender Responsive Budgeting in Agriculture**, minikits are distributed only to women farmers, accordingly an amount of ₹ 400.00 lac is proposed for minikit distribution for the year 2011-12 it includes fodder minikits also. ₹ 30.00 lac for enhanced seed production infrastructure and development and hi-tech demonstration on Government farms and ₹ 30.00 lac are proposed for development of organic farming package of practices as well as support to RSSCA.

7.54 **Crop Compensation Fund:** For this purpose, a token provision of ₹ 0.03 lac has been kept for annual plan 2011-12 for payment of GOR share in claims under NAIS.

7.55 **Capital Expenditure-** Total provision of ₹ 280.01 lac for 2011-12 has been kept under this sector. Sub component wise detail is given below:

- a) Civil Works through Department/ RSAMB:** During the year 2011-12, a provision of ₹ 225.00 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. These funds are required for general repair and maintenance for official building and resident quarters of AAOs, Agriculture Supervisors, Kisan Seva Kendra which are more than twenty years old and required immediate maintenance.
- b) Fertilizer Quality Control/ Pesticide Testing Lab/ Pesticide Residue Testing Lab and Soil Testing Lab:** A provision of ₹ 55.01 lac has been kept during 2011-12 for necessary for modernization, addition alteration of buildings and furniture fixtures.

1.	Establishment & Strengthening of Pesticides Testing Labs and Pesticide Residue Testing Lab.	5.00
2.	Establishment/ Strengthening of Fertilizer Testing Labs: (A) Soil Testing Labs (B) State Share for 10 new Static Soil Testing Laboratories (STL 04MSTL/ 02FTCS) to be established with support of GOI under CSS – NPMSHF Scheme	50.00 0.01
	Total	50.01
	Grand Total	55.01

7.56 **Funds for PRIs:-** A token provision of ₹ 0.03 lac is proposed as grant-in-aid to Panchayati Raj Institutions for the year 2011-12 for the activities transferred.

RASHTRIYA KRISHI VIKAS YOJANA (RKVY/ NADP)

7.57 Concerned by the slow growth in the Agriculture and allied sectors, the National Development Council (NDC), in its meeting held on 29th May, 2007 resolved that a special Additional Central Assistance Scheme Rashtriya Krishi Vikas Yojana (RKVY) be launched. The NDC resolved that agricultural development strategies must be reoriented to meet the needs of farmers and called upon the Central and State Governments to evolve a strategy to rejuvenate agriculture. The NDC reaffirmed its commitment to achieve 4 percent annual growth in the agricultural sector during the XI Plan. RKVY is to incentives States to draw up plans for their agriculture sector more comprehensively, taking agro-climatic conditions, natural resource issues and technology into account, and integrating livestock, poultry and fisheries more fully.

7.58 Objectives -

- To incentives the states so as to increase public investment in Agriculture & allied sectors.
- To provide flexibility and autonomy to states in the process of planning & executing Agriculture & allied sector schemes.

- To ensure the preparation of agriculture plans for the districts and the states based on agro-climatic conditions, availability of technology and natural resources.
- To ensure that the local needs/ crops/ priorities are better reflected in the agricultural plans of the states.
- To achieve the goal of reducing the yield gaps in important crops, through focused interventions.
- To maximize returns to the farmers in Agriculture and allied sectors.
- To bring about quantifiable changes in the production and productivity of various components of Agriculture and allied sectors by addressing them in a holistic manner.

7.59 Assistance under RKVY is available in two categories:

- **Stream-I** - For new interventions proposed by the Districts on project basis.
- **Stream-II** - For meeting the additional requirements of the Districts for ongoing approved activities.

Table No. 7.1

Total funds received under RKVY since inception

(₹ in crore)

Year	Funds received	Funds available including unspent balance	Exp. incurred/ booked	Unspent Balance as on 1 st April	UCs Sent to GOI
2007-08	55.76	55.76	0.00	55.76	0.00
2008-09	233.76	289.52	175.78	113.74	175.78
2009-10	186.12	299.86	248.62	51.24	248.62
2010-11 (upto Dec.)	322.17	373.41	249.01		203.76

Table No. 7.2

Department wise allotment of RKVY for 2010-11 (as per funds available)

(₹ in lac)

S. No.	Detail of Project	Amount Sanction by SLSC in 2010-11	Total funds released including unspent balance	Exp. booked till Dec. 2010
1	Agriculture	23358.02	9844.64	8807.98

S. No.	Detail of Project	Amount Sanction by SLSC in 2010-11	Total funds released including unspent balance	Exp. booked till Dec. 2010
2	Forest	800.00	883.00	466.62
3	Animal Husbandry	1137.34	537.70	264.50
4	RSAMB	1885.00	1221.00	800.00
5	MPUA&T, Udaipur	1741.87	135.26	77.00
6	RAU, Bikaner	1886.65	495.00	200.00
7	Horticulture	10717.54	6840.06	4892.29
8	Total Cooperative Department	4841.23	1513.00	1513.00
9	Involvement of Private Sector/ NGOs in Agriculture Dev. Activities			
i	Golden Rays Project 2010-11(New)	3893.00	3893.00	3893.00
ii	Promoting hybrid seed for increasing Maize productivity in Rabi Seasons By Monsanto	100.00	0.00	0.00
iii	NGOs and Private Sector.	300.00	164.06	15.00
iv	LUPIN	50.00	12.50	0.00
v	N.M. Sadguru	1150.00	365.00	630.53
vi	Sangod tehsil Kota. (New Project)	400.00	200.00	0.00
vii	Jhadol ACCESS, (New Project)	29.00	14.50	11.05
viii	Tijara district Alwar (Sir Syed Trust)	36.00	17.00	11.28
ix	Medi Word Education Society	53.48	12.50	8.00
x	Gayatri Seva Shansthan	46.88	23.44	11.38
	Total NGO/ Private Sector	6058.36	4702.00	4580.24
10	Fisheries	345.75	200.10	86.00
11	RCDF	2421.00	1200.00	800.00
12	Higher Education (by RSAMB)	200.00	100.00	50.01
13	Water Resources	2088.00	2364.00	2364.00
	Grand Total	57480.76	30035.76	24901.64

7.60 The proposal for RKVY for 2011-12 is ₹ 51587 lac.

HORTICULTURE

7.61 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. 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
- Promotion of sprinkler and drip irrigation system
- Promotion of high value vegetable, flower and aromatic crops.
- Organic farming of fruit, vegetable and spices
- Green house cultivation
- Promotion of water harvesting structure for irrigation in rainfed area.
- Post harvest management and marketing of horticulture produce.

7.62 The ground water exploitation, which was just 35% in the year 1984, has reached a level of 138% in 2011. Out of 249 blocks in the state, only 30 blocks are in safe category. Nearly 60% of water required in agriculture is extracted from ground water.

7.63 Water saving devices such as Sprinkler and Drip system save considerable amount of irrigation water. It has been proved that Sprinkler save 30 to 40% and Drip save up to 70 to 80% water.

7.64 In order to ensure sustainability in horticulture crop production, diversification and employment generation, Government of India has taken several steps to increase area of Horticulture crops.

7.65 Planning commission has set a target to achieve 8% growth rate in Agriculture sector and in order to achieve set target has envisaged 8% growth in Horticulture and earmarked 30% budget for Horticulture. At the national level Horticulture crops occupy 13.78% area of total net cropped whereas Rajasthan Horticulture crops covers 3.87% area of net cropped area in the State.

7.66 In Rajasthan, the State government has made strenuous efforts to augment Horticulture production. Consequently, the State has achieved 10.6% of growth during 2005-06 to 2008-09 against 5.8% growth achieved during 2001-02 to 2003-04.

7.67 For the year 2010-11, GOI has allocated funds to tune of ₹ 70.00 crore under National Horticulture Mission. Against this amount, the size of NHM for leading Horticulture States Maharashtra, Karnataka, Andhra Pradesh, Tamil Nadu, and Utter Pradesh is ₹150.00 crores, 132.00 crore, 123.50 crore, 130.00 crore and 125.00 crore respectively for the same period. The funding pattern between GoI and GoR under National Mission on Micro Irrigation (NMMI) and National Horticulture Mission (NHM) are 80:20 for general farmers/ 83.33:16.67 for small & marginal farmers and 85:15 respectively.

7.68 Therefore, it has been planned to double the size of NHM and NMMI during 2011-12 from the level of 2010-11. Accordingly, outlay for Horticulture has been enhanced from the current level of ₹ 4045.02 lac for year 2010-11 to ₹ 9000.00 lac for 2011-12. The outlay proposed for 2011-12 for different programmes are as under:

Table No. 7.3

(₹ in lac)

S. No.	Schemes	Agreed Outlay 2010-11	Proposed Outlay 2011-12
1	Establishment of Fruit Orchards	20.00	20.00
2	Demonstration	50.00	50.00
3	Subsidy for PHM activities	10.00	0.01
4	Establishment of green houses	135.00	234.00
5	Innovative schemes	6.00	6.00
6	Setting of vermi compost units	8.00	8.00
7	Dry land Horticulture (Rain Water Harvesting Structure)	7.50	7.50
8	Assistance on PP Measures	15.00	15.00
9	Research and development	10.50	10.50
10	Legal and court cases	1.50	1.50
11	Publicity and Media Support	8.50	8.50
12	Revitalization & Development	0.02	0.01
13	Matching Share to NHM (15%)	1200.00	1800.00
14	Matching Share to MIS (20%)	1600.00	3800.00
15	Additional Subsidy for Drip	873.00	2938.98
16	Subsidy on Processing Unit of Mandarin, Aonla and Isabgol	100.00	100.00
	Grand Total	4045.02	9000.00

7.69 The brief description of each programme is as under:

Establishment of Fruit Orchards:

7.70 In order to promote the diversification of agriculture for sustainability of the farm economy, the assistance for the establishment of new orchards would be provided @ ₹ 7500 per ha particularly for those crops which are not included in NHM. During Annual Plan (2011-12) an outlay ₹ 20.00 lac has been proposed for fruit plantation in 267 ha.

Demonstration:

7.71 In order to propagate production technology of horticultural crop, demonstration would be laid out for which assistance of ₹1500/ per beneficiary for vegetables, spices, flowers, medicinal & aromatic crops, Mehandi and ₹ 5000/ per beneficiary for fruits demonstration. During Annual Plan (2011-12) an outlay of ₹ 50.00 lac has been proposed for laying out demonstrations.

Additional Subsidy for Establishment of Green House:

7.72 For growing off season vegetables seedlings and other horticultural crops under controlled atmospheric conditions of green house, 50% subsidy is provided under National Horticulture Mission. This technology is not getting momentum due high cost involvement. So, differential subsidy @ 25% for small/ marginal farmers would be provided for green house which are to be established under NHM and under RKVY on the pattern of NHM in Non NHM districts. During the Annual Plan (2011-12) an outlay of ₹ 234.00 lac has been proposed for differential subsidy.

Innovative schemes:

7.73 The horticultural development has got multi dimensional applications and emerging areas and every day a new technique is evolved. To try up new things, which we may not covered in any of the State Plan/ CSS schemes, the specific need based activities are also required to planned and implemented in the field with the assistance to farmers not exceeding 75% of the cost of activity. During the Annual Plan (2011-12) an outlay of ₹ 6.00 lac has been proposed for innovative schemes.

Research & Development:

7.74 To enhance the productivity level of different horticultural crops and better Post Harvest Management, the need based research work including labour and contractual manpower would be conducted on state agricultural universities and adaptive trial centers of department and other public or private institutions. Assistance would also be provided to develop protocols and production of homogeneous disease free planting material of horticultural crops and for running/ establishment of Tissue Culture Lab/ Phytosanitary Labs. During the Annual Plan (2011-12) an outlay of ₹ 10.50 lac has been proposed for Research and Development.

Setting of vermi compost units:

7.75 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 providing assistance for production of organic input vermi compost. The assistance may be given @ ₹ 2500/- for establishing vermi compost unit at farmer's field. During the Annual Plan (2011-12) an outlay of ₹ 8.00 lac has been proposed for setting of 320 vermi compost units.

Dry land Horticulture (Water Harvesting Structure):

7.76 Collection of rainwater by diverting the flow of runoff in cemented structure and recycling it for the production of horticultural crops 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 @ ₹ 30000/- or 50% of the cost of construction of cemented / polyethylene

lining based water harvesting structure. During the Annual Plan (2011-12) an outlay of ₹ 7.50 lac has been proposed for construction of 25 Nos. of water harvesting structure.

Assistance on P.P. Measures:

7.77 The plant protection measures for horticulture crops are very much essential. When the infestation of insect, pest and disease has become epidemic and resulted in severe loss of crop yield, the assistance may be given @ 50% cost of pesticide up to maximum of ₹ 500/- per ha with an outlay of ₹15.00 lac for Annual Plan (2011-12).

Matching Share of National Horticulture Mission:

7.78 National Horticulture Mission has been launched by GOI from the year 2005-06 with 100% assistance in X Plan. From the year 2010-11, 15% matching share is required from the State Plan. For the Annual Plan (2011-12) an outlay of ₹ 1800.00 lac has been proposed for matching share of NHM. The schemes undertaken under NHM are:

- Establishment of new orchards of fruits, flowers, spices and medicinal plants,
- Development of nurseries to produce quality planting material,
- Seed production programme,
- Rejuvenation of old orchards,
- Development of water resources,
- Establishment of green houses, shade nets,
- Promotion of bee keeping,
- Organic farming, certification of organic farming,
- Vermi compost production,
- Cold storages,
- Pack houses,
- Refrigerated vans,
- Mobile processing units,
- Infrastructure of mandies etc.

Matching Share of National Mission on Micro Irrigation (NMMI):

7.79 GOI have launched National Mission on Micro Irrigation with the 50% financial assistance (40% central share and 10% state share) for general farmer and 60% financial assistance (50% central share and 10% state share) for small/marginal farmers. For the Annual Plan (2011-12) an outlay of ₹3800.00 lac has been proposed for matching share of MIS.

Components of the Scheme:-

- Drip Irrigation.
- Sprinkler Irrigation.

Additional assistance for Drip:

7.80 To increase the area under efficient methods of drip irrigation, 60% subsidy to Small Farmers/Marginal Farmers and 50% to general farmers is being provided under Micro Irrigation Scheme. This technology is not getting momentum due high cost involvement. So that, additional subsidy would be provided for drip installation. The additional subsidy would be provided @ 10% to Small Farmers/Marginal Farmers and 20% to general farmers with the financial provision of ₹ 2938.98 lac during 2011-12.

Subsidy for Processing Unit of Aonla, Mandarin & Isabgol:

7.81 In order to reduce the post harvest losses and for fetching better market prices, establishment of processing units of Aonla, Mandarin and Isabgol would be promoted in the State. A subsidy @ 50% of capital cost limited to ₹1.00 crore is being provided for establishment of processing unit of Aonla, Mandarin and Isabgol. The subsidy will be admissible for only those new processing units for which term loans are taken from bank/ financial institutions. For the Annual Plan (2011-12) a provision of ₹100.00 lac has been proposed for establishment of processing units. Apart from this a token provision is proposed for old scheme of PHM.

WORK PLAN

Macro Management of Agriculture-Work Plan:-

7.82 To accord greater flexibility to the state so as to address state specific needs it was recognized, understood and appreciated by both GOI and GOR that the shift over to Macro Management Mode of transfer of Central Assistance in place of nationally determined and driven individual schemes entitled scheme for implementation/complementation of states efforts through Work Plan, it was started from December 2000. Out of 27 Central Sponsored Scheme that were merged by the GOI under Work Plan, only 24 schemes were being implemented in the State through different Departments of which following schemes of Agriculture have been merged under Work Plan:

- ICDP Wheat
- ICDP Coarse Cereals
- Sugarcane based cropping system
- Balanced & Integrated use of Fertilizers
- Agriculture Mechanization
- Reclamation & development of Alkali Soils

7.83 This scheme is being implemented in all the 33 Districts of the State for the development of cereal crops wheat/ barley/ rice/ bajra/ jowar etc. The funding pattern between GOI & GOR is 90:10. The main activities covered under the schemes are- Popularization of certified seeds, IPM, INM, Agriculture Mechanization, Extension, Training & Information Support activities, Soil Reclamation, Infrastructure Support etc. The rate of assistance available under this scheme is 25%.

7.84 The department wise break up of allocated amount is as under: -

Table No. 7.4

(₹ in lac)

S. No.	Name of Department	Eleventh Plan Outlay	Proposed outlay 2011-12
1	Agriculture Deptt.	2350.00	200.00
2	WD & SC- NWDPRAs	3150.00	250.00
3	Forest Deptt.	1500.00	331.90
	Total	7000.00	781.90

Watershed Development Project for Rainfed Areas (NWDPRAs)

7.85 NWDPRAs is a major thrust scheme under Macro Management mode of Agriculture (work plan) of Ministry of Agriculture, Govt. of India aiming towards the integrated development of rainfed areas and up scaling of Rural Livelihoods. Macro Management mode of Agriculture (Work Plan) is being managed and supervised by the State Agriculture Department in the State. Funds are released by MoA, GoI to State Agriculture Department and further, Agriculture Department releases funds to the other Departments concerned with Macro Management Mode of Agriculture (Work Plan).

7.86 NWDPRAs is a major thrust scheme under Macro Management Mode of Agriculture (Work Plan) of Ministry of Agriculture, Govt. of India aiming towards the integrated development of vast rainfed areas and up scaling of rural livelihoods including various activities including increasing agricultural productivity, creation supplementary irrigation potential through rain water harvesting and adoption of effective water management practices. Looking to the above facts funds for watershed development approach is required to maintain the pace of implementation of programme, the scheme aims at increasing agricultural productivity and promoting other allied farming activities in as sustained manner in rainfed areas by adopting the systematic approach reinforced with watershed development, creation of sustained employment opportunities by way of improved on-farm agriculture technologies and allied activities for restoring the confidence of farmers in rainfed agriculture from economic point of view.

7.87 Rural Development & Panchayati Raj Department is the administrative Department for implementation of NWDPRAs. Projects are

being monitored through Zila Parishads. Under NWDPR, funds from State Govt. are released to CEO, Zilla Parishads (RD Cell). Later, CEO, Zila Parishads transfer funds to Project Implementing Agencies (PIAs) and Watershed Committees.

7.88 It is pertinent to mention here that with effect from 01.04.2008, new COMMON GUIDELINES FOR WATERSHED DEVELOPMENT has been made effective.

NWDPR during Eleventh FYP

7.89 An Abstract of sanctioned NWDPR Eleventh FYP:

Total District Covered (DWDUs)	21
Total Eligible Panchayat Samities/ Blocks(PIAs)	111
Total No. of micro watersheds (Delineated)	285
Cost per ha.	₹ 12000/max
Total sanctioned cost	₹ 259.25 crore
Total targeted area for development	2.185 lac ha

7.90 No expenditure could be made under Watersheds in 2007-08 due to late sanctions & receipt of funds in last week of March, 2008.

7.91 During 2008-09, an amount of ₹1000.00 lac was released on 27.10.2008 and ₹545.50 lac was available as unspent balance as on 01.04.2008, thus making total budgetary availability of ₹1545.50 lac for watersheds.

7.92 ₹ 688.42 lac was utilised during 2008-09 which is 68.84% against the releases made and 44.54% against available budget including unspent balance. As on 01.04.2009 an amount of ₹ 857.08 lac was available as unspent balance.

7.93 In 2008-09, preparatory phase activities including awareness generation, setting up institutional arrangement at various level i.e. Deployment of Watershed Development Teams (WDT), Constitutions of Self Help Groups (SHG), Users Groups (UG), Watershed Committees (WC), Registration of WC, their training and capacity building, Benchmark survey of resources, Entry Point Activities, PRA, DPR preparation etc. were taken up in 2008-09 and initial months of 2009-10, works phase activities have started now. Due to preparatory activities, expenditure during 2008-09 is comparatively less.

7.94 For the year 2009-10, a sum of ₹ 2500.00 lac has been approved by MOA, GOI and ₹ 857.08 lac was available as unspent balance as on 01.04.2009 and ₹ 83.74 lac was also available as unspent fund of Xth FYP the total financial target for 2009-10 is ₹ 3440.82 lac.

7.95 During 2009-10, an amount of ₹ 1642.92 lac was released and ₹ 940.82 lac was available as unspent balance as on 01.04.2009, thus making total budgetary availability of ₹ 2583.74 lac for XI FYP watersheds.

7.96 ₹ 1557.62 lac has been utilised during 2009-10 against total available amount of ₹ 2583.74 lac, which is 60.29%.

7.97 For the year 2010-11, a sum of ₹ 1625.00 lac has been approved by MOA GOI and ₹ 1026.12 lac was available as unspent balance as on 01.04.2010. The total financial target for the year 2010-11 is ₹ 2651.12 lac, for development of 22091 ha area.

SOIL CONSERVATION THROUGH FOREST DEPARTMENT

7.98 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. A sum of ₹ 19.14 lac is proposed for the year 2011-12. Scheme-wise detail is as under.

Soil Conservation in Hilly & Ravenous Areas:

7.99 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. ₹ 19.14 lac is proposed for the year 2011-12.

AGRICULTURE MARKETING BOARD

7.100 **Construction works:** It was proposed to invest ₹ 12620 lac on construction of Link Roads, Mandi Yards and their maintenance along with creation of infrastructure from deposits of other departments; against which ₹ 5920 lac has been invested till November, 2010. Out of this ₹ 3215 lac, ₹ 1980 lac and ₹ 725 lac have been incurred respectively on building, construction of new roads and their maintenance. As per Government decision maintenance work of KUMS roads onward has been shifted to P.W.D.

7.101 Against the physical target of construction of 150 km new roads and strengthening of 100 km old roads, 48.38 km new roads and 87.02 km old roads were constructed/specially repaired till November, 2010.

7.102 **Pack Houses and Cold Storages:** The construction of pack house at Sohela, district Tonk is under progress. An expenditure of ₹ 184 lac has been incurred on construction of buildings. Arrangement of machinery and equipments is under process. It is likely to be completed by January, 2011. A Cold Storage at Jhalarapatan completed with an expenditure of ₹ 221 lac in November, 2010.

7.103 Work order for construction of multi-chambered cold storages at Alwar, Sikar, Jodhpur, Sumerpur, Bhilwara and Udaipur has been issued under R.K.V.Y. All these cold storages are in construction phase.

7.104 **Kisan Bhawans:** 26 district level Kisan Bhawans were sanctioned out of which 17 have been completed. A sum of ₹ 2451 lac has been incurred on the construction of Kisan Bhawans till November, 2010. As

per Government decision the Kisan Bhawans situated at Divisional Headquarter at Kota, Bharatpur, Ajmer, Jodhpur, Bikaner and Udaipur except Jaipur have been handed over to concerned APMC for their operations and maintenance.

7.105 Policy for Promotion of Agro-Processing and Agri-Business 2010: 17 applications have been received out of which 10 related to land allotment in Krishi Upaj Mandi Samities of the State. These applications have been registered. The identification and demarcation of land is in process. Land has been identified, demarcated and earmarked for two proposals and are being recommended for allotment of land to Government. Rest 7 applications were forwarded to concerned department for other incentives under the policy.

7.106 The benefits under the policy have been published in the news papers for general awareness among people. The policy and the procedures, application forms and available incentives under the policy have been placed on the Board's web site www.rsamb.rajasthan.gov.in along with press release in newspapers.

7.107 A provision of ₹ 7500 lac for the year 2011-12 has been kept for construction of buildings in mandies.

RAJASTHAN STATE WAREHOUSING CORPORATION

7.108 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.

7.109 An outlay of ₹ 390.00 lac has been proposed for the Annual Plan 2011-12.