

## **CHAPTER -15**

### **WATER RESOURCES**

15.1 Water is a unique gift of nature to the mankind. Water is a renewable resource and is almost fixed and finite in content. It is impossible to substitute it for its uses, difficult to purify once polluted and expensive to transport. Water resources play a major role in development of agriculture, hydropower, drinking water facilities, livestock activities, navigation, recreation and all other forms of uses. Rajasthan suffers from a disproportionately poor availability of water when compared to its potential large users, people, animals and agriculture. The severity of this can be best realized by the following table:

**Table No. 15.1**

<b>Parameter</b>	<b>Share of State in Nation (in %)</b>
Area	10.50
Population	5.50
Livestock	18.70
Cultivable area	13.88
Surface water	1.16
Ground water	1.72

15.2 The situation has worsened over time due to a rapid increase in use-related parameters. The population growth of the state is among the highest in the country. Demand for water from hitherto in substantial uses such as industry, tourism and recreation as well as sanitation and environmental purposes has been growing. Nearly one-third of the State is arid and another 30 per cent semi-arid, which implies that nearly two-third of the State suffers from recurrent water scarcity. Monsoon rain is also lesser in Rajasthan due to parallel alignment of Aravali hills with monsoon.

15.3 The State is faced with peculiar topographical extremities - hostile desert, rough Aravalli ranges, practically no perennial rivers, tribal/hilly area and recurring famine conditions due to scanty rainfall. There are 15 defined river basins in the State. The available surface water in the State is 21.7 BCM, out of which only 16.05 BCM is economically utilizable. The State has so far harnessed about 11.85 BCM of surface water. The State has to depend largely on the water, which it receives from the neighbouring States under various inter-state water sharing agreements.

15.4 The ground water also plays an important role especially in agriculture and drinking water supply. The water supply schemes in Rajasthan are basically dependent on ground water. There is acute stress on ground water reserves in the State on account of agricultural activities. More than two third blocks in the State are over exploited. The over exploitation of ground water has resulted in deterioration of ground

water quality. In above circumstances, the role of rain harvesting for recharging of aquifers has become very important, which will help in replenishment of ground water resources in the State. Management of ground water can be effectively carried out with participation of stake holders and people participation.

15.5 Being water deficit State, due to low & erratic rainfall, both surface water resources and ground water resources are a matter of immediate concern. Therefore, conservation, preservation and optimum utilization of every drop of water constitute the core of water resources planning and management in the State. The role of the State in the integrated development of water resources is gradually evolving from that of owner to that of facilitator. The State Water Policy focuses on paradigm shift from engineering bases solutions to community based management system. Thus the role of water user associations and NGOs assumes greater importance in water management. The focused attention in the XII Plan would be on harnessing the remaining surface water, reducing gap between irrigation potential created & utilized, strengthening Water User Associations and water harvesting, improve irrigation efficiency with shift from surface irrigation to adoption of drip & sprinkler irrigation system and from traditional cropping pattern to new less water requiring crops.

15.6 The challenges of water sector are many facets. Following are some of the important issues which have to be addressed in the strategic planning in water sector:

- Growing imbalance between demand and supply of water. The present deficit of about 8 BCM and it is likely to increase to 9 BCM by 2015.
- Inequality of access and uncertainty of water, deteriorating water quality, high cost of service, low recovery of cost and low expenditure on O&M.
- Lack of ownership among the stakeholders.
- Low water charges.
- Out dated and unaccountable governance institutions for water management.
- Ground water over exploitation.
- Lac of consensus among stake holders on water sector reforms.

15.7 The above background leads to the following priorities and activities for water resources development and management:

- Optimum development and utilization of water resources on sustainable basis.
- Integrated water resources planning.

- Improving irrigation efficiency: More crop per drop of water
- Providing flood protection and drainage facilities
- Ensuring proper functioning of existing structures, conveyance systems and other assets through adequate maintenance and operation.
- Minimizing adverse impacts of water resources development on the natural environment and on population affected by project implementation works.
- Promoting beneficiaries' participation in all aspects of water planning and management, with particular emphasis on Water User Associations intended to manage and maintain irrigation systems, both physically and financially.
- Advancing the technological and scientific level of all the staff in the water sector through intensification of applied research, technology transfer, training and education.
- Facilitating private initiative in development, operation and management of water projects.
- Human Resource Development.
- Institutional reforms.
- Water charges rationalization.
- Water resources information systems and awareness campaign

15.8 An outlay of ₹ 7302.05 crore was fixed for water resources sector in the XI Five Year Plan. An expenditure of ₹ 4169.47 crore is likely to be incurred during the XI Plan period. Scheme-wise details are given in the following table.

**Table No. 15.2**

(₹ in crore)

S. N.	Scheme	XI Plan Outlay	Actual Exp. 2007-11	Likely Exp. 2011-12	Likely Exp. XI Plan
1.	Irrigation	5377.22	2140.71	735.87	2876.58
2	IGNP	1430.00	751.56	152.10	903.66
3.	Ground Water	5.85	1.03	0.81	1.84
4.	Colonization	0.95	0.07	--	0.07
5	Command Area Development	488.04	280.83	93.30	374.13
6	Flood Control Works	36.50	7.19	6.00	13.19
	<b>Total</b>	<b>7302.05</b>	<b>3181.39</b>	<b>988.08</b>	<b>4169.47</b>

### **Irrigation**

15.9 The emphasis has been laid on harnessing of maximum water resources by investing huge funds over plan periods. Irrigation potential in the State is likely to reach the level of 37.91 lac hectares by March, 2012 with the construction of 118 major & medium and 3311 minor

irrigation projects. Three major irrigation projects namely Mahi, Bisalpur and Ratanpura Distributory, 2 medium projects Bandi Sendra and Sukli Selwara and 60 minor irrigation works have been completed during the XI Plan period. Work on three Major Irrigation Project viz. Rajasthan Water Sector Restructuring Project, Gang Canal Modernization and Narmada, 5 Medium Irrigation Projects viz. Gararda, Takli, Piplad, Lhasi, Gagrin and 43 Minor irrigation Works are in progress. Works of 5 Minor Irrigation Projects are likely to be completed during 2011-12.

15.10 An expenditure of ₹ 2876.58 crore is likely to be incurred on various projects during the XI Plan period against the outlay of ₹ 5377.22 crore. Additional irrigation potential of 306.50 thousand hectare is likely to be created during the XI Plan period. Scheme-wise details are given in the following table.

**Table No. 15.3** (₹ in crore)

S. N.	Scheme	XI Plan Outlay	Actual Exp. 2007-11	Likely Exp. 2011-12	Likely Exp. XI Plan
i	Multi-purpose Projects	131.30	55.86	20.37	76.23
ii	Major Projects	2889.28	919.03	243.30	1162.33
iii	Gang Canal	87.63	91.70	21.00	112.70
iv	Medium Projects	845.00	354.51	77.00	431.51
v	Water Management Services	126.65	39.50	12.77	52.27
vi	Minor Irrigation	1260.86	680.11	361.43	1041.54
	<b>Total</b>	<b>5377.22</b>	<b>2140.71</b>	<b>735.87</b>	<b>2876.58</b>

15.11 Outlays of ₹ 4394.54 crore and ₹ 1179.25 crore are proposed in the XII Plan and the Annual Plan 2012-13 respectively for irrigation works. Scheme-wise details are as follows:

**Table No. 15.4**

(₹ in crore)

S. N.	Scheme	Proposed for	
		XII Plan	2012-13
i	Major Projects	1758.30	372.30
ii	Medium Projects	800.16	93.10
iii.	Minor Irrigation	1518.35	656.85
iv	Gang Canal	200.00	40.00
v.	Flood Control Works	25.13	4.00
v.	Water Management Services	92.60	13.00
	<b>Total</b>	<b>4394.54</b>	<b>1179.25</b>

### **Multi-purpose Projects**

#### **Left Over Technical Committee Works:**

15.12 The LOTC works are shareable between MP and Rajasthan on matching basis. An expenditure of ₹ 76.17 crore is likely to be incurred during the XI Plan against the outlay of ₹ 131.30 crore. Only token provision has been kept in XII Plan for adjustment of Bakhra Beas Management Board.

## **Major Projects**

### **Narmada Project (AIBP):**

15.13 Narmada Canal Project was taken up to utilize 0.5 MAF of Narmada water allocated to Rajasthan. This water will be available to Rajasthan from Sardar Sarowar Project, under construction in Gujarat. The share of water will be delivered at Rajasthan-Gujarat border through 458 Km long Narmada Main canal (NMC). The water of river Narmada reached in Rajasthan in the month of March, 2008. The canal system in Rajasthan would provide irrigation in 2.46 lac hectare by adopting improved method of irrigation i.e. sprinklers irrigation system which is mandatory in this project. The project would also provide drinking water facility to 1107 villages & 2 towns. Revised cost of the project is ₹ 2481.49 crore. An expenditure of ₹ 673.10 crore is likely to be incurred during the XI Plan period. Additional irrigation potential of 2.35 lac hectare is likely to be achieved by the end of XI Plan. Outlays of ₹ 1125 crore and ₹ 225 crore are proposed in the XII Plan and the Annual Plan 2012-13. A target of creation of 11 thousand hectare CCA is proposed in the year 2012-13.

### **Rajasthan Water Sector Restructuring Project (EAP):**

15.14 This major project was conceived for the improvement of selected surface irrigation system to improve performance efficiency through the involvement of Water User's Association (WUA). The revised cost of the project is ₹ 792 crore. It is proposed to rehabilitate 91 projects covering an area of 619.95 thousand hectare. This project also envisages taking up remedial works of 16 identified large dams, which are in distress. The work on this project was started in the year 2002-03. An expenditure of ₹ 736.59 crore has been incurred up to March, 2011. An expenditure of ₹403.12 crore is likely to be incurred on the project during the XI Plan period. The project is likely to be completed in 2012-13. An outlay of ₹141 crore is proposed for the project in Annual Plan 2012-13.

### **Modernization of Gang Canal:**

15.15 The Gang Canal project is under operation since 1927 to provide irrigation in Ganganagar district. The canal system has deteriorated over the years. The modernization project has been prepared for the lining of Bikaner canal in the Punjab and canal system in Rajasthan portion. The revised cost of the project is ₹ 621.42 crore. An expenditure of ₹ 498.76 crore has been incurred up to March, 2011. An expenditure of ₹ 21 crore is likely to be incurred in the year 2011-12. An expenditure of ₹ 112.68 crore is likely to be incurred on the project during the XI Plan period. Additional irrigation potential will be created in 96.51 thousand hectares, out of which 89.44 thousand hectares is likely to be created up to March, 2012. An outlay of ₹ 200 crore and ₹40 crore is proposed for the project in XII Plan and the Annual Plan 2012-13 respectively.

**Yamuna Water Project:**

15.16 Two separate major projects have been prepared for utilization of 3198 cusec Yamuna water allocated by the Upper Yamuna River Board in its 22nd meeting namely (i) Yamuna Water project for Bharatpur district and (ii) Yamuna Water Project for Jhunjhunu and Churu districts. An expenditure of ₹ 30 lacs is likely to be incurred during 2011-12. Outlays of ₹ 230 lac and ₹ 30 lac are proposed in the XII Plan and the Annual Plan 2012-13 respectively.

**Parwan Project:**

15.17 Parwan major irrigation cum drinking water project is proposed to be constructed in Jhalawar District on Parwan River near village Akawad for providing irrigation to 138239 hectare land of Kota, Baran, Jhalawar districts. The total cost of this project is ₹ 1114 crore. Outlays of ₹150 crore and ₹ 1 crore are proposed for the XII Plan and the Annual Plan 2012-13 respectively.

**Kalisindh Irrigation Project:**

15.18 Kalisindh Irrigation Project is proposed to be constructed on Kalisindh river near Bhanqarasa in Jhalawar district. Estimated cost of the project is ₹ 416.76 crore as approved by the CWC.

**Dholpur Lift Irrigation Project:**

15.19 Dholpur Lift Irrigation Project is proposed to be constructed to irrigate 34665 hectare land of Dholpur district. The estimated cost of the project is ₹ 90.60 crore. Outlays of ₹20 crore and ₹ 1 crore are proposed in the XII Plan and the Annual Plan 2012-13 respectively.

**Medium Irrigation Projects****Gardada Irrigation Project:**

15.20 This irrigation project is under construction on river Mangli Dungari & Ganesh Nallah, which is a tributary of river Chambal. The dam site is located near village Polaspura in district Bundi. The project would provide irrigation in an area of 9 thousand hectare. The work on this project was started in 2003. The estimated cost of the project is ₹ 147.04 crore. Additional irrigation potential of 950 hectare has been created. An expenditure of ₹ 68.57 crore is likely to be incurred on the project during the XI Plan period. Outlays of ₹13.16 crore and ₹ 2.50 crore are proposed in the XII Plan and the Annual Plan 2012-13 respectively.

**Takli Irrigation Project:**

15.21 Takli irrigation cum drinking water supply project is under construction on river Takli, which is a tributary of Amjar River as well as Kalisindh River. The dam site is located near village Dhankya in Kota district. The project would provide irrigation facility in an area of 7,386

hectares and drinking water facility to 4 villages and 2 town of Ramganjmandi Tehsil, Kota district. The revised cost of the project is ₹131.44 crore, out of which an expenditure of ₹ 55.40 crore has been incurred up to March, 2011. An expenditure of ₹ 64.37 crore is likely to be incurred during XI Plan period. Outlays of ₹ 48.58-crore and ₹ 20 crore are proposed in the XII Plan and the Annual Plan 2012-13 respectively.

**Piplad Irrigation Project:**

15.22 Piplad irrigation project is under construction on river Piplad which is a tributary of Ahu River. The dam site is located near village Sulia Chowki in tehsil Bhawanimandi in Jhalawar Distt. The project would provide irrigation in an area of 4,688 hectares in 19 villages of Pachpahar Tehsil. The estimated cost of the project is ₹ 65.18 crore, out of which an expenditure of ₹ 62.86 crore is likely to be incurred up to XI Plan period. Outlays of ₹ 7.18 crore and ₹ 6 crore are proposed in the XII Plan and the Annual Plan 2012-13 respectively.

**Gagrin Irrigation Project:**

15.23 Gagrin medium irrigation project is under construction on river Ahu, a tributary of Kalisindh river. The dam site is located near village Kalapipal of tehsil Pachpahar of Jhalawar district. The project would provide irrigation in an area of 7243 hectare. The estimated cost of the project is ₹ 80.12 crore, out of which an expenditure of ₹ 68.16 crore is likely to be incurred up to the XI Plan period. Outlays of ₹ 67.11 crore and ₹ 12 crore are proposed in the XII Plan and the Annual Plan 2012-13 respectively. It proposed to create CCA of 3000 hectare during 2012-13.

**Lhasi Irrigation Project:**

15.24 Lhasi medium Irrigation Project envisages construction of earthen dam on river Lhasi near village Khajuria Tehsil Chhipabarod district Baran. The project would provide irrigation in an area of 5,755 hectare. The revised cost of the project is ₹ 106.95 crore. An expenditure of ₹ 82.57 crore is likely to be incurred up to the XI Plan period. Outlays of ₹ 61.96 crore and ₹ 22 crore-are proposed in the XII Plan and the Annual Plan 2012-13 respectively.

**New Medium Irrigation Project:**

15.25 Following new medium irrigation projects are proposed to be constructed in the state.

**Table No. 15.5****(₹ in crore)**

S. N.	Project	Estimated Cost	Proposed for	
			XII Plan	2012-13
1.	Manoharthana	93.10	175.82	0.10
2.	Hatiyadeh	70.66	70.66	0.00
3.	Rajgarh	98.40	168.86	0.50
4.	Andheri	87.53	87.53	0.00

**Minor Irrigation Projects:**

15.26 The minor irrigation projects have low cost and are completed in short gestation period. Such works create potential in arid and semi-arid region of the State, where scope of surface water is limited and the scope of exploitation of groundwater is very limited. An expenditure of ₹117 crore is likely to be incurred on 43 minor irrigation projects in the year 2011-12 and irrigation potential of 4647 hectare is likely to be created. Outlays of ₹ 1518.35 crore and ₹ 659.95 crore are proposed in the XII Plan and the Annual Plan 2012-13 respectively for all minor irrigation projects including water harvesting structures, State Partnership Project (European Commission).

**Ground Water Department:**

15.27 The water supply schemes in Rajasthan are basically dependent on ground water. There is acute stress on Ground Water reserves in the State on account of agricultural activities. Approximately 90 percent of the draft of ground water is for agricultural purpose. Out of 249 blocks in the State only 30 blocks are in "safe" category, 08 block fall in "semi critical" category, 34 in "critical" and 176 blocks in "over exploited" category. The overall scenario of ground water availability is very grim.

15.28 Three ground water management pilot projects namely Mandor-Osiyan in Jodhpur district, Piprali in Sikar district and Khamnor in Rajasmand district have been executed in the State under RWSRP during the XI Plan period. Under the project, different type of activities like construction of water harvesting structures, awareness generation, IEC activities and management of ground water through gram panchayat level committees were taken up. The project has been extended up to March, 2013. Demand side activities and mobilization of people activities are being transferred to the gram panchayat level committees along with assets and equipments. An office building is being constructed at Bikaner and is likely to be completed during first year of XII Plan.

15.29 The over exploitation of ground water has also resulted in deterioration of ground water quality. In above circumstances, it is high time to play for harvesting the rain water, which will help in replenishment of ground water resources in the State. Management of Ground Water can be effectively carried out with participation of stake holder and in present scenario people participation is an effective tool for implementation of any type of ground water related issue.



15.30 Following activities are proposed to be taken up during the XII Plan.

- Strengthening of Water Level Monitoring System
- Ground Water Assessment & Publication
- Community based Ground Water Management Pilot Area.
- Community Awareness on Ground Water Situation.
- Human Resources Development & Capacity Building.
- Preparation of Recharge Master Plan.

**Indira Gandhi Nahar Project:**

15.31 Indira Gandhi Nahar Project is under implementation with the objective to transform the desert waste land of West & North Western Rajasthan in to agriculturally productive area. The project has been divided in two stages. The 204 km long feeder and main canal up to 189 km along with its distribution system falls under Stage-I. Indira Gandhi Main Canal downstream 189 km to tail along with distribution system falls in Stage-II, where works in lift schemes of Bikaner zone and flow area of Jaisalmer zone are in progress.

15.32 A provision of ₹1430 crore was kept for IGNP Stage I & II in the XI Plan with a target of lining of 1330 km. of canals and opening of CCA of 3.32 lac hectare. Likely achievements are 47.11 km of lining and 36 thousand hectare CCA up to March, 2012 with an expenditure of ₹ 904.80 crore. The shortfall in achievement is due to the reason that targets were set for completion of IGNP as per 19.63 lac hectare CCA but the CCA was restricted up to 16.17 lac hectare due to less availability of water. Thus, it necessitated to focus to works that could lead to optimum utilization of available water in the existing canal areas and where the canal system is under construction. Therefore, works like pilot project for sprinkler irrigation in 27449 hectare area, installation of SCADA system, automation of gates on main canal, improvement of escape reservoir etc were taken up, most of which have been completed.

15.33 The canal construction works in 15.96 lac hectare CCA are likely to be completed by the end of XI Plan. It is proposed to complete canal works in remaining 21 thousand hectare CCA during the XII Plan. Apart from this, some important works to strengthen existing canal system is also to be executed. In lift schemes of IGNP Stage-II, a project of establishing sprinkler irrigation system in 27449 hectare area is nearly on completion. Total CCA of lift schemes of Stage-II is 3.476 lac hectares. Revised estimates for establishing sprinkler system in remaining 3.20 hectare have been approved by the Planning Commission and CWC in 2011. It is proposed to take up sprinkler system in 48 thousand hectare area during the XII Plan period, out of which 2000 hectare CCA will be

created in 2012-13. Outlays of ₹ 925 crore and ₹105 crore are proposed in the XII Plan and the Annual Plan 2012-13 respectively.

## **COMMAND AREA DEVELOPMENT**

### **Command Area Development & Water Utilization Department:**

15.34 The Command Area Development Programs aims to bridge the gap between irrigation potential created and its early utilization. This is achieved through the efficient soil, agriculture and water management. The main objectives of CAD Programs are as follows

- Efficient utilization of water, minimizing of water losses through lining of canals, increasing canal capacity, installation of control structures, dissemination of improvement techniques.
- Maximizing gains from water use through On Farm Development Works, constructing improved and wider road network, improved agriculture techniques brought about by adaptive research and its dissemination through agriculture extension.
- Equitable distribution of water through warabandi and greater control over canal system as a whole.
- Involvement of farmers in management of irrigation system through Participatory Irrigation Management by their active involvement.

### **Indira Gandhi Nahar Project, Bikaner:**

15.35 Construction of lined water courses, agriculture extension, adaptive research, soil survey, anti water logging and land reclamation works are taken under Command Area Development. OFD works are funded under CSS on the matching basis.

15.36 The following five CAD Projects are controlled by the Chief Engineer, Indira Gandhi Nahar Project located at Bikaner.

1. CAD Indira Gandhi Nahar Project, Bikaner.
2. CAD Sidhmulh Nohar Irrigation Project, Hanumangarh.
3. CAD Amarsingh Sub Branch Irrigation Project, Bikaner.
4. CAD Gang Canal Project, Ganganagar.
5. Mandi Committee, Bikaner

15.37 The financial and physical targets and likely achievements during the XI Plan under these projects are indicated in the following table.

**Table No.15.6**

(₹ in crore)

<b>S. N.</b>	<b>Scheme</b>	<b>XI Plan Outlay</b>	<b>Actual Exp. 2007-11.</b>	<b>Likely Exp. 2011-12</b>	<b>Likely Exp. XI Plan</b>
1.	IGN Project, Bikaner	256.20	159.93	5.93	165.86
2.	Sidhmulh Nohar	37.89	31.61	10.17	41.78
3.	Amarsingh Jassana	34.91	22.83	9.54	32.37

<b>S. N.</b>	<b>Scheme</b>	<b>XI Plan Outlay</b>	<b>Actual Exp. 2007-11.</b>	<b>Likely Exp. 2011-12</b>	<b>Likely Exp. XI Plan</b>
4.	Mandi Committee,	10.25	1.06	0.51	1.57
5.	Gang Canal	0.00	0.47	30.86	31.33
	<b>Total</b>	<b>339.25</b>	<b>215.90</b>	<b>57.01</b>	<b>272.91</b>

15.38 OFD works in the total area of Indira Gandhi Nahar Project, Bikaner has been completed covering 47119 ha. area. Farmers are being benefited by the various activities of the project. Outlays of ₹18.90 crore and ₹ 3.18 crore are proposed for the project in the XII Plan and the Annual Plan 2012-13 respectively for adaptive research, soil survey, agriculture extension and anti logging and land reclamation activities.

15.39 Sidhmukh Nohar Irrigation Project covers 1,14,379 hectare area of 99 villages of Hanumangarh and 14 villages of Churu district. Lined water courses in 38,362 ha area are likely to be constructed during the XI Plan against the target of 44, 000 ha. By the end of XI Plan, lined water courses in 1,02,239 ha area will be completed. Lined water courses in 4000 ha area will be constructed during the Annual 2012-13 with an outlay of ₹ 5.28 crore. The project will be completed in 2012-13.

15.40 Amarsingh Sub Branch Project covers 50,702 ha area. OFD works in 25728 ha area likely to be completed during the XI Plan against the target of 38,700 ha. By the end of XI Plan, lined water courses in 33380 ha area will be completed. Lined water courses in 2500 ha area will be constructed during the Annual 2012-13 with an outlay of ₹ 3.30 crore. The project will be completed in 2012-13.

15.41 Gang Canal Project covers an area of 2.32 lac hectare. The project was started in 2011-12. Lined water courses in 16,000 hectare area are likely to be constructed during XI Plan against the target of 16200 hectare. It is proposed to construct lined water courses in 1,59,700 hectare and 25,200 ha area during the XII Plan and the Annual Plan 2012-13 with outlays of ₹ 233.78 crore and ₹ 39.07 crore respectively.

15.42 Additional facilities of roads, drinking water and electrification are being provided in the mandi area located in Bikaner. Outlays of ₹ 4.50 crore and ₹ 0.60 crore are proposed for these activities during the XII Plan and the Annual Plan 2012-13 respectively.

#### **CAD Chambal, Kota:**

15.43 The Command Area Development (CAD) Program of Chambal was initiated in 1974. The Chambal Valley Development Scheme is a joint venture project of MP & Rajasthan States for integrated area development comprising of irrigation, drainage works, on farm development and agriculture & research activities. Water of the Chambal River has been harnessed in three phases by constructing dam and barrage across river i.e.

- In first phase Gandhi Sagar Dam, for storage of water and power production and Kota Barrage was constructed.
- In second phase water storage for power generation (Rana Pratap Sagar Dam was constructed between Gandhi Sagar and Kota Barrage).
- In third phase Jawahar Sagar Dam was constructed for power generation.

15.44 An expenditure of ₹129.37 crore is likely to be incurred during the XI Plan period against the outlay of ₹100 crore under State Plan. Likely expenditure under the Centrally Sponsored Schemes during the XI Plan is ₹ 62.49 crore against the outlay of ₹ 56.05 crore. Targets kept for the various activities and likely achievements during the XI Plan and targets proposed for the XII Plan and the Annual Plan 2012-13 are as follows:

**Table No.15.7**

<b>S. N.</b>	<b>Item</b>	<b>Unit</b>	<b>Target XI Plan</b>	<b>Likely Ach. XI Plan</b>	<b>Target XII Plan</b>	<b>Target 2012-13</b>
1.	Canal Lining	Km.	30	100	430	45
2.	Earth Works	Lan. Cum.	40	37.27	22	2.3
3.	Canal Roads	Km.	20	11.50	0	0
4.	Training Program	Nos.	300	76	40	8
5.	Managerial Subsidy	ha.	-	-	1,80,00 0	4500
6.	OFD Survey	ha.	55040	36788	57000	9000
7.	OFD Planning & Design	ha.	55040	36207	57000	9000
8.	Reclamation of Water Logged land	ha.	-	-	7000	0
9.	Sprinkler Irrigation	ha.	-	-	2080	451

15.45 During the Twelfth Five Year Plan, the priorities of the project will be as follows:

- Enhancing water use efficiency by reducing losses.
- Efficient utilization of water through people participation.
- Land development to improve water use efficiency.
- Capacity building for efficient utilization of land & water resources.
- Transfer of new technologies to farmers.

15.46 The following strategies will be adopted to achieve the objectives of the project.

- Rehabilitation of irrigation system of the project area.
- Providing institutional & financial support to farmer's organization to make them self-sustainable.
- Training of member of farmer organizations including exposure trips. Adaptive trials, demonstration and field days for farmers.

15.47 Outlays of ₹ 310.35 crore and ₹ 30.00 crore are proposed for the activities of the project in the XII Plan and the Annual Plan 2012-13 respectively.

**CAD Bisalpur:**

15.48 The project is engaged in construction of lined water courses in the field of CAD Bisalpur district Tonk in order to achieve the optimum water use & enhance water application efficiency. A target of construction of lined water courses in 46015 hectares was kept in the XI Plan, against which likely achievement is 46015 ha. Outlays of ₹ 46.16 crore and ₹ 37.05 crore were kept for all the activities for the project in the XI Plan under State Plan and Centrally Sponsored Schemes respectively against which likely expenditures are ₹ 41.58 crore and ₹ 29.70 crore. Construction of water courses in 39095 hectare and 14000 hectare area are proposed in the XII Plan and the Annual Plan 2012-13 respectively.