

## MINOR IRRIGATION

### AGRICULTURE (GROUND WATER)

Water is an important basic needs for agriculture development and economic advancement in Union Territory of Puducherry. The water required for irrigation, drinking and industrial purposes in Puducherry region are mainly met-out from ground water resources. Owing to the dependence on ground water, the ground water resources of Puducherry has reduced in the past and it is a natural fact that the water requirement of a developing society gets increased day by day. In such a context, the water requirement of Puducherry has also increased due to increase in agricultural activities, population and proliferation of industries. Of the total water requirement of Puducherry, 80% is required for irrigation. The intensity of irrigation through tube wells, which was 50% during the pre-independence period has increased to 98%. As an adverse effect, the ground water levels in the villages of Puducherry lowered gradually and have gone from 12 to 35 meters below ground level and also sea water intruded the ground water regime of villages located in the coastal areas. The intrusion has taken effect to a distance of 1 to 4 kms inland, from the sea shore of Puducherry. The ground water development and management presents special challenges in view of its cross sectoral users for drinking, industrial and irrigation purposes.

To protect the ground water regime of Puducherry from desaturation, attention towards harvesting rain water for recharging ground water and conservation of ground water was given during the 10<sup>th</sup> and 11<sup>th</sup> Five Year Plan periods under the scheme “Integrated Scheme for Development, Harvesting, Recharging and Conservation of Ground Water”.

Programmes were implemented for rain water harvesting, water conservation, stabilized the existing irrigable command area coming under irrigation tube wells by extending attractive subsidy assistance. In order to control and regulate the exploitation of ground water. “The Puducherry Ground Water (Control and Regulation), Act” was enacted, and is being enforced by a separate body “Pondicherry Ground Water Authority”. The behavior of ground water was monitored intensely in terms of quality and quantity.

For better water resources planning and management of Puducherry, a World Bank Loan assisted Project “Hydrology Project Phase-II” is being implemented in Puducherry since 2006-07 onwards and will be completed by May 2014. Under the project, a water information system containing exhaustive information on ground water, surface water, water quality and hydrometeorology have been created. Further, it is stated that the establishment of a state-of-the-art data centre and level II+ laboratory for water testing have been constructed

at Lawspet. Besides, an automatic weather station at Kalapet has been established and the observation of tube wells to monitor the behavior of ground water have been constructed. The other programmes like establishment of river gauging sites across river for measurement of surface water flow and research study to improve the ground water potential in the North Western parts of Puducherry are under progress, which will be completed by April 2014. To disseminate the water resources data collected, a website has been created and the project is coming to an end by May 2014. After the funding period of World Bank, the project will be continued and will be operated under a separate organization namely viz. "The Puducherry Water Resources Organization" which was established under Societies Registration Act, 1860.

During the year 2014-15, it is proposed to continue programmes of rain water harvesting, water conservation measures like drip / sprinkler irrigation, stabilization of existing irrigable command area by extending subsidy assistance to farmers as was done in the 10<sup>th</sup> and 11<sup>th</sup> Plan periods. Besides, drilling machineries will be hired out at subsidized hire rates to the needy farmers towards construction of tube wells. One new high range power rig and compressor units will be procured to strengthen the drilling unit of the State Ground Water Unit. Control and Regulation of ground water exploitation will be undertaken through Pondicherry Ground Water Authority.

The Hydrology Project Phase-II, which is being implemented is coming to an end by June 2014. In order to sustain the project after the funding period of World Bank, it will be continued under a separate organization titled "The Puducherry Water Resources Organization of Union Territory of Puducherry Hydrology Organization" which has been created under Societies Act. This organization will undertake the creation of "Water Resource Information System" for future better water resources planning and management and will undertake water research studies to improve the potential and quality of ground water by adopting the latest the latest innovative techniques. The funds required for operating the society will be extended in the form of Grants-in-aid.

## **PUBLIC WORKS (SURFACE WATER)**

Puducherry region mostly depends on tank irrigation and underground water resource, while Karaikal, Mahe and Yanam regions depend on river water for the purpose of irrigation. There are about 84 tanks in Puducherry region and the total ayacut covered is 6456 Hectares. Karaikal region mainly depends on the surface water of Cauvery river and its distributaries.

The total ayacut covered is 10,974 Hectares. The irrigation system is in micro level in Yanam and Mahe region .

Construction of Bed Dams / Check Dams is most essential to save more surface water and recharge the depleted ground water to avoid the adverse situation arising out of continuous drawal of ground water resulting intrusion of salinity in the coastal region. Further, it is proposed to improve the tanks, channels and survey works wherever necessary. The tanks such as Oussudu, Abeshekapakkam tank, Karasur, Kanaganeri, , , Thondamanatham chinnaeri, Kodathur, Korkadu, surplus weir at Bahour tanks are proposed to be improved during 2015-16. It is proposed to improve the regulatory works, improvements at Perungaloor Eri, Thirukanchi Eri, Kizhur, Mangalam anicuts, etc. Further tank bunds are proposed to be strengthened and developed for inspection tracks.

The following major works are proposed during the year 2015-16:

- 1) Construction of Anicut High Level Bridge across the Sankaraparani River connecting kaikalpet and suthukeny in Manadipet Commune, Puducherry. This leads to increase in the Ground water level in the adjoining areas which helps the formers for agriculture purpose.
- 2) Construction of Bed dam across river Gurvaiyar at Melsathamangalam Village, Villianur Commune will be taken up.
- 3) Construction of protection walls in the weaker portion of Malatar river, T.N. Palayam Village, Ariyankuppam Commune, Puducherry.

In Karaikal Region, improving the roads / tanks / mini lakes, forming mini lakes, artificial re-charge of ground water, diverting the irrigation carriers / channels are taken up. Construction of retaining wall in the LB of Thirumalairajanar, Protecting LB of Vanjiar near Valliyammai Nagar grave yard in Karaikal and desilting of various urban drainage channel and Pasanathar sangam in Kottucherry, Nedugadu, Thalatheruand Keezhakasakudy will be completed.

In Yanam Region, interlinking of French Channel and Adavipolam Channel will be taken up. The length of the French Channel is 2.5 Kms. and the length of the Adavipolam Channel is 5.0 kms. Every year desilting and improvement of two channels are being carried out for discharging full quantum of water for improving the surface water in irrigation channels. Major works like improvement to the French Channel from Bheem Nagar to Muduthumulu in Yanam and providing Lift Irrigation facilities from Godavari River at Farampeta have been proposed.

## OUTLAY AT A GLANCE

Sector : MINOR IRRIGATION

No. of Schemes : 3

Department : 1. AGRICULTURE

(Plan : 2 + CSS:1)

2. PUBLIC WORKS

(₹ in lakh)

Annual Plan 2013-14 Actual Expenditure	:	1562.83
Annual Plan 2014-15 Approved Outlay	:	2890.38
Annual Plan 2014-15 Revised Outlay	:	2215.74
Annual Plan 2015-16 Approved Outlay	:	2698.14

(₹ in lakh)

Sl. No.	Name of the Scheme	Annual Plan 2013-14	Annual Plan 2014-15		Annual Plan 2015-16	
		Actual Expdr.	Approved Outlay	Revised Outlay	Approved Outlay	Of which capital content
(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>AGRICULTURE</b>						
1.	Integrated scheme for development, harvesting, recharging and conservation of ground water	481.18	500.00	482.86	490.00	--
<b>PUBLIC WORKS</b>						
2.	Augmentation of surface water and ground water potential recharge scheme including strengthening of infrastructure.	713.82	562.19	651.69	704.95	280.00
	Negotiated Loan	367.83	1825.00	1078.00	1500.00	1500.00
	<b>Sub-total</b>	<b>1081.65</b>	<b>2387.19</b>	<b>1729.69</b>	<b>2204.95</b>	<b>1780.00</b>
	<b>Total(Plan)</b>	<b>1562.83</b>	<b>2887.19</b>	<b>2212.55</b>	<b>2694.95</b>	<b>1780.00</b>
Centrally Sponsored Scheme (CSS)			Approved Outlay 2014-15	Revised Outlay 2014-15	Approved Outlay 2015-16	
3.	Census Survey of Minor Irrigation		3.19	3.19	3.19	
	<b>Total (Plan + CSS)</b>	<b>1562.83</b>	<b>2890.38</b>	<b>2215.74</b>	<b>2698.14</b>	<b>1780.00</b>

**Scheme No. 1**

Sector : MINOR IRRIGATION

Implementing  
Department : AGRICULTURE

- 1. Name of the Scheme** : Integrated Scheme for Development, Harvesting, Recharging and Conservation of Ground Water
- 2. Objective of the Scheme** :

In order to meet the relentless increase in the demand for water for various purposes and to achieve the goal of optimal use and sustainability and to derive the maximum benefits through development, storage, conservation, distribution and reuse, it has become necessary to make water resources development more imperative by implementing a comprehensive integrated scheme with the following objectives: -

- Rainwater Harvesting and Recharging groundwater
- Water conservation and management
- Construction of rain water harvesting structures like mini lakes and ponds in Karaikal region
- Assessment of ground water potential and monitoring of ground water quality
- Stabilization of irrigation command

“The Puducherry Ground Water (Control and Regulation), Act” was enacted, and is being enforced by a separate body “Pondicherry Ground Water Authority”. The behavior of ground water was monitored intensely in terms of quality and quantity.

**3. Actual Physical Achievements made in the Annual Plan 2013-14 :**

Sl. No.	Item	Unit	Achievement
i)	Laying of underground pipelines at subsidized cost	Nos.	3076
ii)	Installation of sprinkler / drip irrigation set	"	43
iii)	Construction of tube well @ 65% subsidy	"	48
iv)	Distribution of submersible pumpsets with accessories at 65% subsidy	"	36
v)	Construction of medium / deep tube wells	"	10
vi)	Construction of filter points / shallow tube wells (by SB sets)	"	1

**4. Physical Achievements for the Annual Plan 2014-15:**

Sl. No.	Item	Unit	Achievement
i)	Construction of Roof Top Rain Water Harvesting structures in Govt. / Private buildings	Nos.	5
ii)	Laying of underground pipelines at subsidized cost	"	3693
iii)	Installation of sprinkler / drip irrigation set	"	67
iv)	Construction of tube well @ 65% subsidy	"	20
v)	Construction of tube well in SC farmers holdings at 90% subsidy	"	3
vi)	Distribution of submersible pumpsets with accessories at 65% subsidy	"	11
vii)	Construction of new / replacement community tube wells	"	1
viii)	Conduct of training / awareness campaign / demonstration	"	2
ix)	Construction of medium / deep tube wells	"	10
x)	Construction of filter points / shallow tube wells (by SB sets)	"	1

**5. Proposed Physical Targets for the Annual Plan 2015-16 :**

Sl. No.	Item	Unit	Target
i)	Construction of Roof Top Rain Water Harvesting structures in Govt. / Private buildings	"	5
ii)	Construction of Farm ponds in Karaikal region	"	15
iii)	Renovation of dug wells / dug-cum-bore wells	"	10
iv)	Laying of underground pipelines at subsidized cost	"	3070
v)	Installation of sprinkler / drip irrigation set	Nos.	45
vi)	Construction of tube well @ 65% subsidy	"	25
vii)	Construction of tube well in SC farmers holdings at 90% subsidy	"	10
viii)	Distribution of submersible pumpsets with accessories at 65% subsidy	"	21
ix)	Construction of observation tube wells	"	2
x)	Construction of new / replacement community tube wells	"	1
xi)	Conduct of training / awareness campaign / demonstration	"	2
xii)	Construction of medium / deep tube wells	"	20
xiii)	Construction of filter points / shallow tube wells (by SB sets)	"	10

**6. Remarks :** Continuing Scheme

**Scheme No. 2**

Sector : MINOR IRRIGATION

Implementing

Department : PUBLIC WORKS

**1. Name of the Scheme** : Augmentation of surface water and ground water potential recharge scheme including strengthening of infrastructure.

**2. Objective of the Scheme** :  
Augmentation of surface water by desilting and deepening of tanks, lakes, ponds and rivers and strengthening of infrastructure by construction of bed dams, check dams, etc., infiltration wells, construction of regulators and head works, protecting bunds, stabilizing the existing ayacut by way of improvements of various supply channels off taking from tanks, etc. artificial recharge of ground water to store water to a maximum extent.

**3. Actual Physical Achievements made in the Annual Plan 2013-14 :**

- Two recharge borewells was provided.
- 200 mts. of protection work (wall) in anicut was completed.
- One check dam and two bed dams were constructed.
- 6 box culverts were constructed.
- 1410 mts. of drains were constructed at various places.
- 4732 mts. of Gravel / WBM roads were laid.
- Augmentation of one tank by providing pipeline was provided.
- One bridge and one barrage were constructed.
- 175 mtrs. of revetments works were completed.
- 732 mts. of channel improvement works completed.

**Negotiated Loan**

- Construction of Anicut with High level bridge across Sankaraparani river connecting Kaikalapet and Suthukeny in Mannadipet Commune, Puducherry.

**4. Physical Achievements for the Annual Plan 2014-15:**

- Construction of protection wall in Left bank and Right bank of Oural Kuttai channel near Higher Secondary School at Madagadipet Palayam, Manndipet Commune, Puducherry.
- Construction of protection wall on the southern side of the Ouralkuttai from Ouralkulam voikkal Road culvert in Ariyankuppam Commune, Puducherry.
- Construction of Bed Dam across Guduvaiyar near Melasathamangalam Village, Villianur Commune, Puducherry

- Improvements to the inspection track at Manalipet tank in Mannadipet Commune, Puducherry.
- Improvements to the Poosamandabam koil kulam at Nadukalampet in Karaikal.
- Reconstruction of Keezhakasakudy channel head sluice near Kuyavankulathupet at Keezhakasakudy village in Karaikal
- Desilting of Various channel through pasanathar sangam in Kottucherry, Nedugadu, Thalatheru & Keezhakasakudy section in Karikal.
- Improvements to the inspection track on the L.B of Vanjjiar from Kalayankatti Bridge of Lamaire bridge connecting Valliammai Nagar Grave Yard in Karaikal region.
- Construction of pipe syphone across the creak in Island No.3 in Dariyalathippa village, Yanam.
- Remetaling and surface dressing the inspection track along Adavipolam channel in Yanam.

### **Negotiated Loan**

- Balance work for the Construction of bed dam cum bridge across Pambaiyar near the confluence point of Sellipet village, Mnanadipet commune, Puducherry.

### **5. Proposed Physical Targets for the Annual Plan 2015-16 :**

- Improvements to the inspection track of Vikravandi channel from Koonichampet Pudueri feeding channel to Government school culvert in Koonichampet village at Puducherry.
- Construction of retaining wall to ravine and formation of gravel road to cremation yard for scheduled caste at Kodathur in Mannadipet commune, Puducherry.
- Providing retaining wall on both side of channel from surplus course of Perieri from ch. Om. to 387m. at Sandai pudhukuppamm pet in Mannadipet commune, Puducherry.
- Construction of retaining wall along both side Thirukannur Peri eri feeding channel near Manadipet Peri eri in Manndipet commune, Puducherry.
- Construction of retaining wall along the Vikkaravandy main channel near chettipet colony in Mannadipet commune, Puducherry.
- Improvement to the existing B.T. road from Suthukeny pet OHT to Durga Koil.
- Providing B.T. road around Irular kudiruppu to bund road of supply channel from Katterikuppam tank to Kuppam tank in Mannadipet commune, Puducherry.



- Formation of WBM road from ch. 0 m. to 908 m. for Gingee Pathai including construction of culvert at ch. 700 m. in Santhai Pudukuppam, Mannadipet commune, Puducherry.
- Construction of RCC culvert across Putheri canal and formation of WBM road to foreshore bund of putheri in Santhai Pudukuppam village at Mannadipet commune, Puducherry.
- Construction of Bed Dam cum Bridge across Pambaiyar near the confluence point of Sellipet Village, Mannadipet Commune, Puducherry (Balance Work).
- Construction of protection wall in left bank and right bank of Ouralkuttai channel near Higher Secondary School at Madagadipet Palayam Mannadipet Commune, Puducherry.
- Construction of protection wall on the southern side of Ouralkuttai from Uralkulam voikkal Road culvert in Ariyankuppam Commune, Puducherry.
- Protection to theLB vanjiar near Valliyammai nagar grave yard in Karaikal.
- Improvements to Choleeswarar kulam at Padutharkollai in T.R.Pattinam.
- Reconstruction of Rettaikannu bed dam ,Milagaladi bed dam, Kodalikattalai bed dam across Kangeyan A channel at Vizidiyur in Neravy commune.
- Improvements to the sana kulam at Narikurumbai pet in Nedugadu commune.
- Reconstruction of Head sluice at Karuvapattam channel near Adaikalapuram pet in Nedugadu commune.
- Reconstruction of Head sluice at Thiruvengadapurampet in Nedugadu commune.
- Improvements to the French channel from Artikayalanka upto inlet point of Nalla tank in Yanam.
- Improvements to the Adivipolam channel from Isakakula to Dariyalathippa water works in Yanam.
- Construction of shuttering arrangements at drainage channel near kanakalapeta in Yanam.
- Plantation of trees at various Flood Banks in Yanam Region.
- Extension of drinking water supply line from ferry point to GMC Balayogi Varathi in Yanam.

### **Negotiated Loan**

- Construction of drain and providing approach road to Selliamman Odai from OHT to ECR at Selliamman Nagar in Periya Kalapet, Puducherry.
- Constn. Flood carrier in the Ganapathy chettikulam drain from PIMS road to ECR culvert in Kalapet, Puducherry
- Construction of check dam across the Sankaraparani river at Chetti Pet village in Mannadipet commune, Puducherry.
- Construction of retaining wall for the Annai Nagar Kalinkal channel from Alankuppam peri eri to the state border, Puducherry.

- Construction of retaining wall for irrigation channel from Throwbathi Amman koil to state border Sanjiveerayan pet, Puducherry.
- Construction of retaining wall on both sides of branch feeding channel of Sedarapet sitheri from culvert at new Anganwadi building to main channel of Sedarapet sitheri in Sedarapet new colony, Puducherry.
- Construction of retaining wall on both sides of channel from Thondamanatham velleri sluice to Sedarapet main road culvert at Meenatchi pet Thondamanatham village, Puducherry – Phase-II from 580 m. to 980 m.
- Construction of retaining wall on both sides of channel from Thondamanatham velleri sluice to Sedarapet main road culvert at Meenatchi pet Thondamanatham village, Puducherry – Phase-I .

**6. Remarks** : Continuing Scheme