

## 9.11 IRRIGATION, COMMAND AREA DEVELOPMENT AND FLOOD CONTROL

Water is the elixir of life a precious gift of nature to the mankind and millions of other species living in the earth. It is fast becoming a scarce commodity in most parts of the world. Water is a serious limiting factor as the State has harnessed the available surface water potential. Of the total annual water potential of 46,540 million cubic metres (MCM) in the State, surface flows accounts for nearly half. Of the two major resources of irrigation water in the State namely, surface and ground water, the surface water potential of about 2.4 million hectares (24,160 MCM) has almost been fully (more than 95%) tapped since late sixties. Ground water resource is, therefore, the only alternative source for further development. The river *basin planning* for optimum utilization of water resources is particularly important for water starved Tamil Nadu State. Since a large percentage of consumptive use is through Irrigation, Irrigation water management is to be given a high priority. This task requires a strong institutional arrangement for effective implementation of the policies for better water management, and *participatory approach*, which is being strongly advocated by water experts.

### Total Water Potential

The total surface water potential of the State is 24,160 MCM (853 TMC) including the contribution (7391 MCM or 261 TMC) from the neighbouring States, viz., Kerala, Karnataka and Andhra. The total water potential of the State including ground water is 46,540 MCM (1643 TMC).

### Total Water Potential

Sl. No.		MCM	TMC
1	<i>Surface Water Potential</i>		
	Within State	16769	592
	From neighbouring States	7391	261
	Sub-Total	24160	853
2	Ground water potential	22380	790
	<b>Total</b>	<b>46540</b>	<b>1643</b>

*River basins of TN-* There are 34 river basins in Tamil Nadu including minor river basins. For study purposes, they are grouped into 17 by clubbing the minor ones with the adjacent major river basins. Cauvery is the only major river basin (drainage area > 20,000 sq. km.) and out of the remaining basins, 13 are medium basins and 3 minor basins (< 2000 sq. km.). The total surface water potential of river basins is 24,160 MCM (853 TMC).

*Contribution from neighbouring States-* The State depends on neighbouring States for a substantial quantum of water. According to the interim order of the Cauvery Water Dispute Tribunal, Tamil Nadu has to receive 5804 MCM (205 TMC) annually at Mettur reservoir from Karnataka. Adding to this the contribution from neighbouring States to other basins, the total dependence is 7390.7 MCM (261 TMC).

*Reservoirs -* There are 79 reservoirs with a total capacity of about 6895 MCM (243 TMC) (15% of the annual water potential).

*Tanks*- There are 39,202 tanks, 2,322 irrigation main canals & 18,26,906 irrigation wells in the State. The approximate storage capacity of the tanks is estimated as 9,840 MCM (347 TMC).

*Ground Water* -The ground water potential in the State has been assessed both district wise and basin wise. The annual ground water recharge is 22,380 MCM (790 TMC) according to the assessment of the regional Directorate of CGWB, Chennai. The groundwater draft has already crossed nearly 60%.

*Wells*- The number of wells, which in 1951 was only 14,400, increased to 15,28,800 by 1996 and to 18,26,906 in 2000.

### **Major and Medium Irrigation and Flood Control**

Out of the total geographical area of 130 lakh hectares in the State, the net area sown is about 60 lakh hectares, of which about 30 lakh hectares (50%) gets irrigation facilities from surface water through canals, (9.50 lakh hectares) tanks (9 lakh hectares) and wells, tube wells etc. (11.50 lakh hectares). The National Commission on Agriculture assessed the ultimate irrigation potential of Tamil Nadu through Major and Medium Irrigation sources as 15 lakh hectares in 1976. At the commencement of the First Five Year Plan, there were 23 Major and Medium Irrigation Projects benefiting 11 lakh hectares. In the Ninth Plan period up to 2001-2002, the area under irrigation through Major and Medium Irrigation Projects had increased to 29.72 lakh hectares.

During the 10<sup>th</sup> Five Year Plan (2002-2007) upto 2003-2004, an additional irrigation potential of 2323 hectares has been created. During 2004-2005, additional irrigation potential of 7573 hectares is expected to be created and in the year 2005-06 an irrigation potential of 5143 hectares is proposed to be created.

The State is now constrained to find additional water resources through 'trans-basin' diversion of water from the neighbouring States, namely, Kerala, Karnataka and Andhra Pradesh which are blessed with rich water resources which involves 'inter-state' agreements and major policy changes at National level. In this respect, Government of India has formed the National Water Development Agency to look into the urgent need for diversion of surplus water available in the adjoining basins of neighbouring States to augment water resources.

With the above in view, the work of modernizing the Periyar-Vaigai Irrigation System was taken up with World Bank assistance. Similarly, the National Water Management Project was also taken up with World Bank assistance to improve the efficiency and productivity of the old irrigation systems in Sathanur, Kodaiyar, Thambaraparani, Cumbum Valley, Amaravathy Old Channels, Sethiathope, Marudhanadhi and other commands through a more reliable, predictable and equitable irrigation service. The Tamil Nadu Water Resources Consolidation Project (WRCP) with the objectives similar to those of National Water Management Project has been taken up for implementation since 1995-96 and has been completed by 30.09.2004 successfully. *The ICR Mission (Implementation of Completion Report Mission) of World Bank rated that this project has been implemented satisfactorily.*

## Major Projects - Continuing Schemes

### (1) Modernisation of Thanjavur channel

In the Cauvery Delta, irrigation is provided to an extent of about 9.59 lakh acres (including 27,000 acres in Pondicherry State). The head of the delta is the **Grand Anicut**, where the main Cauvery River branches as **Cauvery and Vennar rivers**. This again divides into 36 smaller branches with a total length of 1,607 km. There are 29,881 channels with a total length of 23,960 km.

The modernization of the whole system has become necessary to secure better water management and optimum utilization of water. The Main features of modernization are i) Improvement to head works ii) Improvements to transmission system i.e. raising and strengthening the river banks, iii) putting up regulators and protection works across the rivers for control as well as for command purpose iv) Raising the channels to standards and provision of structures v) Improving the existing drainage for submersion relief vi) Lining of channels up to 40 hectares (100 Acres) limit. So far, lining works have been completed for a length of 854 km, out of the total length of 1,223 km. under the 65 'A' Class Channels and improving the drainage works. By implementing this scheme 229 acre of land has been stabilized.

### (2) Restoration of Channels - Canals

The growth of Ipomea in the irrigation sources is creating major problems in water management and flood control. Therefore silt and Ipomea are being removed by using heavy machinery hired from the Agricultural Engineering Department and other private agencies.

Government has accorded sanction for the year 2003-2004 for an amount of Rs. 35 crore for restoration of channel system. The anticipated expenditure for 2004-2005 is Rs. 1012.19 lakh. An amount of Rs.99.91 lakh is provided for 2005-2006.

## Medium Projects - Continuing Scheme

### (1) Improvements to Veeranam lake

The New Veeranam project was originally sanctioned in August 1993 for Rs.464 crore under the caption "Second Madras Water Supply Project, New Veeranam" as a World Bank aided project. The project envisaged the supply of 190 Mld. of water to the Chennai city. Due to escalation in cost of construction materials and labour, the revised cost is estimated to be Rs. 150 crore. By improvements to the conveyance system, 56,034 acres of ayacut (11,178 acres under Vadavar and 44,856 acres of ayacut under Veeranam) are expected to receive uninterrupted irrigation facility. The anticipated expenditure for the year 2004-2005 is Rs. 600 lakh. A sum of Rs.2000 lakh is provided for this scheme for 2005-2006.

### (2) Construction of an anicut across Ayyar River near Puliyancholai to feed Mahadevi and chain of other tanks in Thuraiyur Taluk of Trichy District

It is provided to divert the excess floodwater to Mahadevi and chain of other tanks by excavating new supply channel from Puliyancholai by constructing an anicut across Ayyar channel. By this scheme an extent of 858.51 acres of land will be stabilised and a gap of 539.97 acres will be bridged. The ultimate cost of this scheme

is Rs.184 lakh. The anticipated expenditure for the year 2004-05 is Rs. 0.01 lakh. A sum of Rs. 50.00 lakh for 2005-2006 is provided.

### **New Schemes-Medium Schemes**

#### *(5) Vadakkupachayar reservoir - WRCP (Tirunelveli District)*

This scheme envisages the formation of a reservoir across Vadakkupachayar, a tributary of Pachaiyar near Manjuvilai village in Nanguneri Taluk in Tirunelveli District. This scheme aims at stabilising 574 hectares of existing ayacut, bridging a gap of 464 hectares of existing irrigated area besides providing irrigation facilities to a new extent of 769 hectares under 45 tanks.

#### *(6) Nambiyar reservoir - WRCP (Tirunelveli District)*

This scheme is to form a reservoir across Nambiyar river in Radhapuram Taluk of Tirunelveli District. The scheme aims at irrigating 152 hectares of new dry lands besides bridging a gap of 185 hectares and stabilising an extent of 369 hectares. The scheme has been completed in all respects under WRCP. The expenditure during the year 2004-05 is anticipated to be Rs.0.01 lakh.

#### *(7) Nanganjiar reservoir (Dindigul District)*

This scheme contemplates the formation of a reservoir across Nanganjiyar, a tributary of river Amaravathy near Idayankottai village in Palani Taluk, Dindigul District to benefit 2,530 hectares of new ayacut with a stabilisation of 24 hectares at an estimated cost of Rs.20.70 Crore. In this project, construction of uncontrolled spillway is in progress. Earth dam works and main canal and spill way works are nearing completion. The Government have approved the reappraisal estimate of this project for Rs.37.36 Crore. A proposal of revised Reappraisal for Rs.41.68 crore is under consideration of the Government. The works are in progress. Totally 98% of the work has been completed. The expenditure during the year 2004-05 is anticipated to be Rs.63.30 lakh. A sum of Rs. 0.02 lakh is provided for this scheme for the year 2005-2006.

#### *(8) Malattar anicut (Ramanathapuram District)*

This scheme is for the construction of an anicut across Malattar river below the existing Kamudhi regulator and just below the confluence point of Gridhamal and Paralayar rivers with Malattar near Sengapadi village in Kamudhi Taluk of Ramanathapuram District. This scheme will benefit stabilisation of an extent of 1758 hectares besides bridging a gap of 156 hectares under the existing 54 tanks.

The Government have sanctioned this scheme at an estimated cost of Rs.15.40 crore. The main components of the scheme are a Masonry Anicut, Head Sluice 2 Nos., Right and Left Main Canals with necessary structures.

Construction of masonry anicut from LS 0 – 200 and 200 – 385 meter has been completed. Construction of right side head sluice and scouring sluice works and formation of earth dam are in progress. For the construction of left side head sluices and scouring sluice agency has been settled and work is to be commenced.

Design for the revised crest of anicut to give additional irrigation facilities to an extent of 1711.70 ha under the same 54 tanks is under finalisation. NABARD has sanctioned a loan amount of Rs.36.247 Crore against the total estimate cost of 42.00 crore. It is programmed to complete the entire work by March 2006.

The anticipated expenditure for this scheme for 2004-2005 is Rs.10.00 lakh. A sum of Rs.2296.10 lakh is provided for this scheme for 2005-2006.

*(9) Providing irrigation facilities to 58 villages In Usilampatti Taluk (Madurai District)*

By implementing this scheme, 570 hectares of wet lands will be stabilised besides bridging a gap of 128 hectares of wet lands under 29 existing tanks and 3 existing ponds in Usilampatti Taluk. Further new dry ayacut of 227 hectares will be brought under irrigation through 3 new tanks. The scheme is in progress.

The Government has accorded approval for this scheme at an estimated cost of Rs.33.81 crore. The revised cost is estimated to be Rs. 78.40 crore. The anticipated expenditure for the year 2004-2005 is Rs.923.00 lakh. A sum of Rs.0.01 lakh is provided for this scheme for 2005-2006.

*(10) Andiappanur odai (Vellore District)*

This scheme envisages the formation of a reservoir of 112 M.Cft. capacity across Andiappanur Odai near Andiappanur village in Vaniyambadi Taluk of Vellore District. The Government have sanctioned this scheme at an estimated cost of Rs.18.28 crore. The Government have also accorded Revised Administrative Sanction for Rs.27.38 crore. By implementing this scheme, an extent of 810 hectares of direct ayacut in Andiappanur and Irunappattu villages in Vaniyambadi Taluk will be benefited for raising double dry crops.

Transfer of 39.69 hectares of forest land, 15 hectares of poromboke land and acquisition of 100.245 hectares of Patta land are involved. Land acquisition has been completed except court case portion. This project is being implemented through the loan assistance from NABARD. 80% of work has been completed. All works will be completed shortly.

The anticipated expenditure for the year 2004-2005 is Rs.800 lakh. A sum of Rs.706.24 lakh is provided for this scheme for 2005-2006.

*(11) Varattar – Vallimadurai reservoir (Dharmapuri District)*

This scheme contemplates formation of a reservoir across Varattar near Vallimadurai village in Harur Taluk in Dharmapuri District. The Government have sanctioned an amount of Rs.19.20 crore for this scheme. The Government have accorded sanction for the Revised Estimate for an amount of Rs.35.95 Crore.

This scheme will stabilise an extent of 110 hectares of wetlands besides benefiting an extent of 1047 hectares of single crop dry lands under Keeraipatti anicut, Ellappudayampatti anicut and Mankuppam Eri benefiting Vallimadurai, Thathavalasi, Somanathan, Keeraipatty, Kudumiyampatti, Achalvadi and Somanathampudur villages in Harur Taluk.

The anticipated expenditure for the year 2004-2005 is Rs.1200 lakh. A sum of Rs.1189 lakh is provided for this scheme for 2005-2006.

*(12) Irukkangudi reservoir (Virudhunagar District)*

This scheme is for the formation of reservoir across Vaippar near Irukkangudi village, Sattur Taluk, Virudhunagar District at a cost of Rs.28.70 crore.(revised estimate for Rs.62.20 Crore) The scheme aims at stabilising an extent of 254 hectares, bridging the gap of 255 hectares and giving new irrigation facilities to 3,705 hectares of dry lands. 93% of works have been completed in overall.

The anticipated expenditure for the year 2004-2005 is Rs.237.78 lakh. A sum of Rs.0.01 lakh is provided for this scheme for 2005-2006.

*(13) Shenbagathope reservoir (Tiruvannamalai District)*

The Shenbagathope Reservoir Scheme contemplates the formation of a reservoir across Kamandalaru in Shenbagathope village of Polur Taluk in Thiruvannamalai District.

The Government have sanctioned this scheme at an estimated cost of Rs.21.33 crore. The Government have accorded the Revised Administrative Sanction for a sum of Rs.34.00 crore for this scheme. This scheme will benefit 2067 hectares by stabilisation and bridging the gap of 642 hectares. By implementing this scheme, a long time demand of this backward region for better irrigation facilities will be fulfilled.95% of the work has been completed; balance works are programmed to be completed shortly. This work is being implemented through "NABARD" loan assistance. The anticipated expenditure for the year 2004-2005 is Rs.388.22 lakh. A sum of Rs.0.01 lakh is provided for this scheme for 2005-2006.

*(14) Canals- Kuppanatham reservoir (Tiruvannamalai District)*

The scheme contemplates formation of a reservoir across Cheyyar near Kuppanatham village in Chengam Taluk of Thiruvannamalai District. The Government have sanctioned this scheme at an estimated cost of Rs.35.46 crore.

This scheme will stabilise an extent of 2528 hectares and bridge a gap of 580 hectares under 22 tanks fed by 5 anicuts and 2 open off-takes. The components of the scheme are Earth dam, Masonry spillway and River sluice. For implementing this scheme, an extent of 190.42 hectares of patta dry lands, 103.75 hectares of poromboke lands, and 13.34 hectares of forestlands are required. Acquisition of patta land has been completed and transfer of poromboke lands are under way. Forest lands have been taken over from Forest Department. NABARD has agreed for loan assistance.

Revised Estimate for this work for Rs. 43.50 Crore has been sanctioned. The anticipated expenditure for the year 2004-2005 is Rs.3171.97 lakh. A sum of Rs.2000.00 lakh is provided for this scheme for 2005-2006.

*(15) Kalvoi – Sadayaneri (Thoothukudi District)*

The Government have sanctioned an amount of Rs.12.33 crore for this scheme. This scheme contemplates utilising the Thambaraparani surpluses for filling twelve tanks in Sadayaneri and Thanjaikkulam to irrigate 314 hectares of ayacut. Besides, two Tharuvais (lakes) will also get filled which will help recharge 634 wells in four villages for irrigating coconut cultivation in 875 hectares. This scheme will also benefit Kalvoi, Vellur, Udayarkulam, Vellamadam, Pidaneri, Eluvarimukki, Mangaimozhi, Sathankulam, Sasthavinallur, Kumadikottai, Thirupaniputhan Tharuvai and Pattakurichi villages in Tiruchendur and Sathankulam Taluks.

This work has been now taken up under State funds. Due to the inclusion of certain additional works, the estimated cost has been increased to Rs.14.35 crore. The Revised Estimate for Rs.14.35 crore has been sanctioned on 30.05.2003. The work has been completed in all respects. The anticipated expenditure for the year 2004-2005 is Rs. 3.56 lakh. For the year 2005-2006, a sum of Rs. 0.01 lakh is provided.

*(16) Bathalapalli – Malattar reservoir (Vellore District)*

The Government have sanctioned this scheme at an estimated cost of Rs.29.55 crore. This scheme will stabilise 1,064 hectares of ayacut and bridge the gap of 61 hectares. The components of the scheme are Earth dam, Masonry spillway, River sluices, Pickup anicut and drops. For implementation of this scheme, an extent of 36.98 hectares of patta land, 17.81 hectares of forestland and 11.32 hectares of poramboke land are required. Land acquisition works have been completed. Forestland has been taken over from Forest Department. NABARD has been approached for loan assistance.

The anticipated expenditure for the year 2004-05 is Rs.100 lakh. A sum of Rs.800 lakh is provided for this scheme for 2005-2006.

*(17) Renovation of Narayana Cauvery channel (Ramanathapuram District)*

The Government have sanctioned the scheme for Rehabilitation of Narayana Cauvery Channel and its anicut (Mandalamanickam Anicut) to feed Sayalkudi tank and other 33 tanks in Ramanathapuram District at an estimated cost of Rs.5.75 crore. 98% works have been completed. Balance works are in progress. This scheme gives irrigation support to 1942.97 hectares of lands.

The anticipated expenditure for the year 2004-05 is Rs. 75.00 lakh. A sum of Rs.0.01 lakh is provided for this scheme for 2005-2006.

*(18) Tank across Uppu odai (Tiruchirappalli District)*

The Government have sanctioned the scheme for formation of a tank across the Uppar Odai, its confluence with Nandiar near Siruvayalur Hamlet of Kanakiliyanallur village in Lalgudi Taluk, Tiruchirappalli District at an estimated cost of Rs. 4.18 crore. This scheme will provide irrigation facilities to a new dry extent of 152 hectares in Kanakiliyanallur village in Lalgudi Taluk. Works are in progress and programmed to be completed shortly.

The anticipated expenditure for the year 2004-05 is Rs. 53.94 lakh. A sum of Rs.2.00 lakh is provided for this scheme for 2005-2006.

*(19) Tank across Mudalai muthu vari (Thanjavur District)*

The Government have sanctioned the scheme for formation of a tank across Mudalai Muthu Vari in Chennampatti village in Thanjavur Taluk and District at an estimated cost of Rs.9.73 crore. This scheme will stabilise 110 hectares of existing wet ayacut, bridge a gap of 9 hectares of wet land and provide irrigation facilities to a new dry extent of 364 hectares in Chennampatti and Vallampudur villages in Thanjavur District and Karumpoondi village in Pudukottai District. Totally 90% of the works have been completed. The remaining work is programmed to be completed early.

The anticipated expenditure for the year 2004-2005 is Rs. 44.00 lakh. A sum of Rs.110.00 lakh is provided for this scheme for 2005-2006.

*(20) Gadana Extension Scheme (Tirunelveli District)*

The Government have sanctioned the scheme for formation of an extension reservoir on the right flank of the existing Gadana Dam in Ambasamudram Taluk of Tirunelveli District at an estimated cost of Rs.18.82 crore.

The scheme will stabilise irrigation in an extent of 511 hectares, bridge a gap in 187 hectares and provide irrigation facilities to a new extent of 67 hectares. The work has been completed in all respects with NABARD loan assistance.

The anticipated expenditure for the year 2004-05 is Rs. 115.00 lakh. A sum of Rs.0.01 lakh is provided for this scheme for 2005-2006.

*(21) Tank across Nayodai (Dindigul District)*

The Government have sanctioned the scheme for formation of a tank across Nayodai, a tributary of Mangariyar in Kannivadi village, Dindigul Taluk and District at an estimated cost of Rs.3.50 crore. Revised Administrative sanction for this scheme has also been accorded for Rs.7.20 Crore. The scheme will provide irrigation facilities to a new extent of 148 hectares. Overall 75% of work has been completed.

The anticipated expenditure for the year 2004-05 is Rs. 321.34 lakh. A sum of Rs. 129.03 lakh for 2005-2006 is provided.

*(22) Reservoir across Nallathangal odai (Erode District)*

The Government have sanctioned the scheme at an estimated cost of Rs.31.01 crore. Revised Administrative sanction for this scheme has also been accorded for Rs.42.70 Crore. This scheme will provide irrigation facilities to 1,919.87 hectares of new dry extent in Nallanpalayam, Alampalayam, Poramium Thurambadi, Moolanur and Ponnivadi villages of Dharapuram Taluk in Erode District.

The anticipated expenditure for the year 2004-05 is Rs. 1258.73 lakh. A sum of Rs.908.00 lakh is provided for this scheme for 2005-2006.

*(23) Tank across Ramakkal odai and Anaivilundan odai (Dindigul DT.)*

The Government have sanctioned the scheme at an estimated cost of Rs.3.55 crore. Revised Administrative sanction for this scheme has also been accorded for Rs.5.65 Crore.

This scheme will provide irrigation facilities to 107.65 hectares of new dry lands. The anticipated expenditure for the year 2005-06 is Rs. 274.70 lakh. A sum of Rs.224.71 lakh is provided for this scheme for 2005-2006.

*(24) Reservoir across Nagariar near Sasthakoil (Virudhunagar District)*

The Government have sanctioned the scheme for formation of a reservoir across the river Nagariar near Sasthakoil in Rajapalayam Taluk of Virudhunagar District at an estimated cost of Rs.7.97 crore.

This scheme will stabilise 1016 hectares of existing ayacut and bridge a gap of 184 hectares under the existing 13 tanks. All works of this scheme have been completed with NABARD loan assistance.

The anticipated expenditure for the year 2004-05 is Rs. 62.27 lakh. A sum of Rs.0.01 lakh is provided for this scheme for 2005-2006.

*(25) Reservoir across Vellakkal Kanar (Vellore District)*

The Government have sanctioned the scheme for formation of a reservoir across Vellakkal Kanar near Vinnamangalam village in Vaniyambadi Taluk of Vellore District at an estimated cost of Rs.7.70 crore.

This scheme will stabilise 431 hectares of existing irrigation besides bridging a gap of 57 hectares. The work will be taken up after obtaining loan assistance from NABARD.

The anticipated expenditure for the year 2004-05 is Rs. 250.00 lakh. A sum of Rs.300.00 lakh is provided for this scheme for 2005-2006.

*(26) Improvements and Beautification of Parks in and around Reservoirs*

The Government in September 1998 have sanctioned the proposal for improvements and beautification of the parks in Krishnagiri, Sathanur, Amaravathi, Vaigai, Aliyar, Bhavanisagar, Manimuthar, Vidur and Mukkombu dam sites at an estimated cost of Rs.3 crore. The improvements and beautification works have been completed. The anticipated expenditure for the year 2004-05 is Rs. 4.67 lakh. A sum of Rs.0.01 lakh is provided for this scheme for 2005-2006.

**(27) Reservoirs**

The reservoirs scheme consists of tank across Sirumalaiyar in Dindigul District, Mambazhathuraiyar reservoir in Kanyakumari District, Mirukandanathi reservoir in Thiruvannamalai District and. The anticipated expenditure for the year 2004-2005 is Rs.592.78 lakh. An amount of Rs.741.71 lakh is provided for 2005-2006. The details of the individual scheme are given below.

*(a) Tank across Sirumalaiyar (Dindigul District)*

The Government have sanctioned the scheme for formation of a new tank across Sirumalaiyar near Rajadhani Kottai village in Nilakottai Taluk of Dindigul District at an estimated cost of Rs.4.91 crore. Revised administrative sanction has been accorded for Rs.8.87 Crore. This scheme will provide irrigation facilities to a new dry extent of 128 hectares in Oruthattu village in Nilakottai Taluk. Totally 75% works have been completed. Action is being taken to complete the balance works shortly.

*(b) Reservoir across Mambazhathuraiyar (Kanyakumari District)*

The Government have sanctioned the scheme for formation of a reservoir across Mambazhathuraiyar near Villukuri village in Kalkulam Taluk in Kanyakumari District at an estimated cost of Rs.9.50 crore. Revised estimate for an amount of Rs.14.80 Crore is under consideration. This scheme will stabilise 3.57 hectares, besides bridging a gap of 25.82 hectares in single crop and 18.14 hectares in second crop and provide irrigation facilities to a new extent of 308.98 hectares in Kalkulam and Villukuri villages in Kalkulam Taluk in Kanyakumari District.

*(c) Reservoir across Mirukandanadhi (Tiruvannamalai District)*

The Government have sanctioned the scheme for formation of a reservoir across Mirukandanadhi near Melsolankuppam village in Polur taluk in Tiruvannamalai District at an estimated cost of Rs.16.79 crore. Revised Administrative Sanction has been accorded for Rs.18.80 crore. This scheme will stabilise irrigation to an extent of 778.05 hectares and bridge a gap in 81.10 hectares. Work is under progress.

*(d) Formation of a reservoir across Adayar at Thiruneermalai in Tambaram Taluk of Kancheepuram District*

This scheme envisages the formation of a multi-purpose reservoir across Adayar at Thiruneermalai for the following purposes.

- To mitigate floods in Adayar.
- To store the flows of Adayar now flowing as a waste into the sea to meet the drinking water needs of the nearby townships of Pallavaram, Anakaputhur, Tambaram etc.
- To store Krishna water as the existing linkages permit to divert Krishna water from Chembarabakkam tank to the Provided Thiruneermalai Reservoir.
- To enhance the environs of the city by flushing the stinking city lying stretches whenever surplus flows are available.
- To augment ground water recharge and to control seawater intrusion.

The cost of the scheme is Rs. 207 crore

*(28) Ullar Reservoir across Palaiyar and Valamazhaiyar (Tirunelveli District)*

The Government have sanctioned the scheme for formation of a reservoir across Palaiyar and Valamazhaiyar near Sivagiri village in Sivagiri taluk, Tirunelveli District at an estimated cost of Rs.39.20 crore. The scheme will stabilise irrigation in an extent of 971.95 hectares and bridge a gap in 595.18 hectares.

The anticipated expenditure for the year 2004-05 is Rs. 100 lakh. A sum of Rs.100.00 lakh is provided for this scheme for 2005-2006.

*(29) Modernisation of rainfed tanks (WRCP)*

The World Bank Mission considered during the field visits in November of 2000 additional schemes involving expenditure of Rs. 3,796 million to utilise the savings in the WRCP project on account of the depreciation in rupees value for rehabilitation / modernisation of rainfed tanks of 462 in Palar basin with an ayacut of 63,002 ha. at an estimated cost of Rs.81.80 crore, 77 tanks in Tambaraparani basin with an ayacut of 10,140 ha. at an estimated cost of Rs.13.18 crore and 81 tanks of Vaigai basin with an ayacut of 8,502 ha. at an estimated cost of Rs. 11.18 crore aggregating to 620 tanks at an estimated cost of Rs.106.26 crore.

The anticipated expenditure for the year 2004-05 is Rs. 0.01 lakh. A sum of Rs.0.01 lakh is provided for this scheme for 2005-2006.

*(30) Formation of a tank across Mathalapallam river near Ramakondahalli village in Pennagaram Taluk of Dharmapuri District*

The scheme contemplates formation of a tank across Mathalapallam River near Ramakondahalli village in Pennagaram Taluk of Dharmapuri District. Administrative Sanction was accorded by the Government for Rs.1415 Lakhs. The provided capacity of the tank is 55.63 Mcft. and it is provided to store 92.40 Mcft. annually in 1.66 fillings. By implementation of this scheme an extent of 700 acres in Ist crop and 400 acres in II crop will be benefitted.

The anticipated expenditure for the year 2004-05 is Rs. 300.00 lakh. A sum of Rs. 1094.06 lakh is provided for this scheme for 2005-2006.

*(31) Construction of an anicut across old coleroon in Perambattu village in Chidambaram Taluk of Cuddalore District.*

This scheme envisages the construction of an anicut across Old Coleroon river near Perambattu village to prevent intrusion of seawater into the old Coleroon river by taking remedial measures on a permanent basis. By implementation of this scheme an extent of 460 acres of dry lands will be converted into wetlands, besides tackling the main problem of seawater intrusion. The cost of scheme works out to Rs. 162 lakh.

The Government have extended the approval for borrowing loan from HUDCO for an amount of Rs.1.785 crore. The expenditure anticipated for 2004-05 is Rs. 65.00 lakh. A sum of Rs.0.01 lakh is provided for this scheme for 2005-2006.

(32) *Excavation of new supply channel from Badathalav tank to Vennampalli tank and 10 other lower tanks upto Kasimkhan tank in Krishnagiri Taluk in Dharmapuri District.*

This scheme envisages the excavation of new supply channel from Badathalav tank to Vennampalli and 10 other lower down tanks. This tank is one of the biggest tanks in Dharmapuri District. An anicut across Markandanadhi (Tributary of Ponniyar) near Marasamudram village feeds surplus water to Badathalav tank through supply channel of 17.9 km length. The cost of the scheme works out to Rs. 700 lakh.

By implementation of scheme 840.74 acres of gap will be bridged and a new ayacut of 500 acres will be benefitted in II crop period. The NABARD loan assistance has been sought for. Agency settled and the work will be commenced soon. The anticipated expenditure for the year 2004-05 is Rs. 200.00 lakh. A sum of Rs.349.93lakh is provided for this scheme for 2005-2006.

(33) *Formation of a Pond across Sambarpallam odai in S.F. No. 18 Alamarathupatti village and conversion of Sorakkappatti pond by linking the surplus of Sambarpallam pond in Mettur Taluk, Salem District*

This scheme is to form a new pond across Sambarpallam odai in Alamarathupatti and to convert Sorakkapatti pond by linking the surplus water of Sambarpallam odai. The ground water level will rise considerably in the surrounding areas of the scheme and will give irrigation facility to an extent of 456.32 acres of new wetland. Work will be completed before June, 2005

The anticipated expenditure for the year 2004-05 is Rs. 100.00 lakh. A sum of Rs.20 lakh is provided for this scheme for 2005-2006.

(34) *Formation of a new tank across Pachilainachiamman odai near G. Kallupatti village in Periyakulam Taluk of Theni District*

This scheme is to form a new tank across Pachilainachiyamman odai. The water yield at the Provided site is about 34.78 mcft. The Provided tank will store about 13.33 Mcft. annually. By using this water an extent of 160 acres of land in G.Kallupatti area will be benefitted. It is programmed to complete the entire work by end of November 2005. The anticipated expenditure for the year 2004-05 is Rs. 75.00 lakh. A sum of Rs.52.00 lakh is provided for this scheme for 2005-2006.

(35) *Formation of a new tank across Periyoothu Odai in Chinnaovalapuram village in Uthamapalayam Taluk of Theni District*

This scheme is to form a new tank across periyoothu odai to store 8.50 Mcft. annually in two fillings by the available yield of 8.845 Mfct. in the provided area. This scheme will give irrigation facility to an extent of 117.46 acres of dry land. It is programmed to complete the work by March 2006. The anticipated expenditure for the year 2004-05 is Rs. 129.20 lakh. A sum of Rs.49.80 lakh is provided for this scheme for 2005-2006.

*(36) Conversion of diversion mud bund into masonry training wall in Palar River at the off take of Athur Vadapathy tank supply channel in Chengleput Taluk of Kancheepuram District*

The yield available in the provided area is about 77.08 Mcft. By utilising the availability of water an extent of 398.13 acres will be stabilised besides bridging a gap of 293.65 acres in Chengleput Taluk of Kancheepuram District. The anticipated expenditure for the year 2004-05 is Rs. 70.00 lakh. A sum of Rs.0.01 lakh is provided for this scheme for 2005-2006.

*(37) Rehabilitation schemes in cauvery basin*

The Government have sanctioned the following schemes for Rehabilitation and Modernisation in the Cauvery Basin with NABARD assistance which are proposed to be completed by 30.06.2006.

- Rehabilitation of Cauvery Regulator at Mile 17/2 at G.A. Head in Thanjavur district.
- Rehabilitation of Vennar Regulator at Mile 17/2 at G.A. Head in Thanjavur district.
- Rehabilitation of G.A. Canal Regulator at Mile 17/2 at G.A. Head in Thanjavur district.
- Rehabilitation of Cauvery Regulator at Mile 26/6 at Thirukattupalli in Thanjavur district.
- Rehabilitation of Kudamurutti Regulator at Mile 26/6 at Thirukattupalli in Thanjavur district.

The works are under progress. The anticipated expenditure for the year 2004-05 is Rs.70.00 lakhs. A sum of Rs.1688.83 lakhs is provided for this scheme during 2005-06.

*(38) Formation of a reservoir across Vandal Odai near Pottal village in Ambasamudram Taluk of Thirunelveli District*

The Government have accorded administrative sanction for Rs.6.14 Crore for the work of "Formation of a Reservoir across Vandal Odai near Pottal Village in Ambasamudram Taluk of Tirunelveli District with NABARD loan assistance. By implementing the scheme an extent of 87.51.0 Ha. of gap in Kar and 41.37.0 Ha. of gap in Pishanam will be bridged and an extent of 3.41.5 Ha. in Kar and 33.57.0 Pishanam will be stabilized under the Manimuthar Main Canal ayacuts. Further 36.82.0 ha of new dry ayacut will be brought under cultivation. Agency settled and the work is being started. The Budget provision for 2005-06 is Rs.5.476 Crore.

**Water Resources Consolidation Project (W.R.C.P)**

The World Bank cleared the Water Resources Consolidation Project at a total cost of Rs.840.84 crore in 1995. Government of Tamil Nadu accorded sanction for an amount of Rs.807.49 crore as the base cost in September 1995. The project is implemented as a sector investment loan, financing an agreed State-wide programme to improve the productivity and sustainability of Tamil Nadu's irrigation sector, to introduce multi-sectoral water planning, to integrate farmers in irrigation management and to strengthen the State's institutional and technical capability in water development, management and planning. The project will enhance agricultural production in about 6 lakh hectares (about 50% of the State's surface

irrigated area) directly benefiting some 40 lakh farmers. Irrigation will be put on a sustainable footing through rehabilitation and modernisation of the systems linked with farmer participation and upgraded maintenance and water management. The WRCP provides for rehabilitation and modernisation of 16 irrigation systems and 25 Minor Schemes in Tamil Nadu (except those in Cauvery Basin) and for completion of the nine on-going irrigation projects, viz., Poigaiyar, Nambiyar, Sothuparai, Mordhana, Rajathopekanar, Kodumudiyar, Vadakkupachayar, Adavinainarkoil and Gridhamal schemes. The Government has accorded administrative sanction for 2,347 packages at a cost of Rs. 1,062 crore.

As a follow on project, the proposal for Water Resources Consolidation Project II for Rs.2,900 crore (base cost of Rs.2900 Crore, Ultimate Cost Rs.3900 Crore) has been sent to the World Bank for financial assistance. To finalise the project report as per the World Bank guidelines, a pilot scheme for rehabilitation works in Hanumanadhi Sub-basin at a cost of Rs.61.53 crore was taken up as a multi-sectoral approach with water using line departments and 85% of works have been completed under WRCP. Balance works are being taken up under state funds and completed by 3/2005. ***The ICR Mission (Implementation of completion Report Mission) from World Bank has rated the over all performance of WRCP as satisfactory.*** The anticipated expenditure for the year 2004-05 is Rs. 2762.17 lakh. A sum of Rs. 546.65 lakh is provided for the year 2005-2006.

### **Flood Control Works**

#### *Rehabilitation and Reclamation of Chennai City Waterways*

Based on the report of the Multi National Consultancy services of MacDonoald flood alleviation works have been taken up in Chennai city with Hudco assistance. The main objective of the scheme is to desilt and remove slush in the waterways like Adyar, Coom, Buckingham Canal, Otteri Nallah, Captain Cotton Channel and other smaller drains. It also proposed to evict the encroachers along the riverbeds and resettle and rehabilitate them. The scheme consists of 4 packages

- (1) Desilting of Buckingham canal from Ennore to Muttukadu and undertaking rehabilitation programme.
- (2) Removal of silt and shoals in Adayar River, formation of flood bank along Kosasthaliyar River and construction of small bridges across Velacherri drainage.
- (3) Flood protection walls in drainages in Chennai metropoliton area.
- (4) Undertaking drudging operation in the adyar and coom mouth.

The anticipated expenditure for the year 2004-05 is Rs. 1373.29 lakh. A sum of Rs. 1003.90 lakh is provided for the year 2005-2006.

### **Anti Sea Erosion Works**

Tamil Nadu has a coastline of about 960 km out of which over 900 km is along the Bay of Bengal and 60 kms along the Arabian Sea. The eastern coast is prone to considerable sea erosion and this has reached alarming proportions in recent years. To solve the problem, the Government is implementing various protection works. The sea shore along the Ennore express way from the Fishing Harbour at Royapuram is severely affected by sea erosion for a length of 9.08 km. Action is being taken for protecting the coastal line and safeguarding the Ennore

express way by providing Rubble Mound Sea Wall (R.M.S. Wall) in a phased programme. The anti sea erosion works taken up in Kanyakumari District and in North Chennai have been completed. A proposal for obtaining technical and financial assistance from the Government of the Netherlands for a permanent solution to the problem of sea erosion along the Ennore expressway is pending with the Government of the Netherlands for approval. A sum of Rs.0.01 has been provided for 2005-06.

### Centrally sponsored scheme

#### *Construction of groyne at Thoothukudi District*

Periathalai, one of the hotspots in Thoothukudi District proposed in the National Coastal Protection Project is now considered under Centrally Sponsored Scheme at a cost of Rs.6.00 Crore with Central share of 2.32 Crore and State share of Rs.3.68 Crore respectively. The work is under progress,

Annual Plan Outlay for 2005-06

### Major and Medium Irrigation and Flood Control and Anti Sea Erosion

An outlay of Rs. 37,285.22 lakhs has been provided for the programmes under this sector as detailed below:

Head of Development/Sub Group	Outlay for 2005-06 (Rs. in lakhs)
<b>Major and Medium Irrigation and Flood Control</b>	
Major and Medium Irrigation Projects	35,734.62
Water Resources Consolidation Project	546.65
Flood Control and Anti Sea Erosion Projects	1,003.95
<b>Total- Major and Medium Irrigation &amp; Flood Control</b>	<b>37,285.22</b>
<b>Centrally Sponsored Schemes</b> – Construction of Rubble Mound Wall along the shore of North Chennai Coast and PWD Sea Erosion- Construction of groyne at Thoothukudi District.	<b>400.01</b>

### Minor Irrigation

The important sources of Minor Irrigation, i.e., tanks, wells and tube wells, contribute significantly to irrigated agriculture in Tamil Nadu. Tanks and wells extend irrigation support to an extent of 20 lakh ha. which accounts for 67 percent of total irrigated area. The State Government has been taking concerted efforts to augment and manage these resources to make them sustainable in the long run through several schemes.

### State Ground and Surface Water Resources Data Centre (Ground water survey)

Conservation and judicious management of ground water resources are the prime need of the hour and also for the coming years so as to make the State of Tamil Nadu to attain self-sufficiency and sustainability in the ground water resources sector. As on July 1997, about 63% of the available ground water resources had been utilized. Ground water, being a dynamic resource, requires continuous exploration, monitoring and assessment, involving multi-disciplinary studies. The

State Ground and Surface Water Resources Data Centre, under the control of a Chief Engineer, undertakes the monitoring of water level in 1671 control wells in Tamil Nadu. An overall Ground water quality network was finalized in consultation with DHV Consultants for entire Tamil Nadu to assess general water quality. It also undertakes the monitoring of ground water quality in the State (3,400 samples), watershed study conducting hydro-meteorological observations under different soil conditions (15 water sheds), analysis of rainfall data and establishing relationship between the runoff and seepage (400 rainfall stations), detailed geological, geophysical and geo-morphological studies to target the potential zones. In this regard, intensive surveys on watershed basis are being carried out for the entire part of Tamil Nadu. It also renders consultancy services to farmers, Government Departments and Government Undertakings for selection of suitable locations for 300 constructing ground water abstraction structures ground water clearance for implementing Minor irrigation schemes. The Centre has been conducting special studies for monitoring seawater intrusion into fresh water aquifer (960 KM along the coast), drilling of exploratory boreholes (50 bore holes) and reassessment of ground water potential in 17,000 villages of Tamil Nadu. (This is being done and the same will be continued during the successive years).

An amount of Rs.453.28 lakh is the anticipated expenditure for 2004-05. For the year 2005-2006, a sum of Rs.272.40 lakh has been provided for the above activities.

#### **World Bank Aided Hydrology Project**

The World Bank came forward in 1995 to assist five Government of India agencies and eight State Governments including Tamil Nadu in the formulation and execution of hydrology project. The project is intended to improve institutional and organizational arrangements, technical capabilities and infrastructure available for measurement, validation, collection, analysis, transfer and dissemination of hydrological, hydro-meteorological and water quality data to eligible users, to establish a permanent modern hydrological data management system so as to get real time field data of hydro- meteorological observation in perennial river basin for successful flood forecast and to assist the Government of India agencies and the participating State in the development of scientific data base consisting of all aspects of hydrological cycle including Surface Water and Ground Water in terms of quality and quantity. The project period is 6 years from 1995. The estimated cost of the project for Tamil Nadu is Rs.38.65 crore. The Government have accorded revised administrative sanction for Rs.51.15 crore. For 2004-05, the expenditure is anticipated to be Rs.185.77 lakh. For the year 2005-2006, a sum of Rs.235.72 lakh has been provided.

#### **Special Minor Irrigation Programme**

This scheme contemplates formation of new tanks, construction of anicuts, excavation of link channels, restoration of abandoned tanks, formation of ponds and standardization of tanks etc. leading to assured irrigation and creating additional irrigation potential. Desilting-cum-reclamation schemes contemplate desilting of tanks to restore the lost capacity due to siltation with reclamation of foreshore lands. An amount of Rs.391.57 lakh is anticipated expenditure for 2004-2005. For the year 2005-2006, a sum of Rs.620.01 lakh is provided for Special Minor Irrigation Programme.

### State Tank Irrigation Projects

There are about 8,903 P.W.D. tanks and 9,886 ex-zamin tanks in Tamil Nadu. The Government of Tamil Nadu launched a scheme during 1995-96 exclusively to provide for the standardization and improvements of irrigation tanks. This project has two components. The first component is standardization and improvement of ex-zamin tanks and the second component, standardization and improvement of the other tanks, which are with the Public Works Department. All ex-zamin tanks, after standardization will be handed over either to the Panchayat Unions or to the Public Works Department depending on their size for further maintenance. The anticipated expenditure for 2004-05 is Rs. 50.00 lakh for ex-Zamindari tanks and Rs. 0.61 lakh for PWD tanks. The provision of Rs.200 lakh for 2005-06 is as follows:

1. State Tank Irrigation Projects, Ex-Zamin Tanks	- Rs. 100 lakh
2. State Tank Irrigation Projects, P.W.D. Tanks	- Rs. 100 lakh
Total	- Rs. 200 lakh.

### Implementation of Minor Irrigation Schemes & SMIP Schemes With Loan Assistance of NABARD

NABARD has extended loan assistance for various MI & SMIP schemes in different stages. Under RIDF V to RIDF IX 19 MI schemes and 55 SMIP schemes were sanctioned, out of this 5 MI Schemes and 39 SMIP Schemes were completed. Balance works are under progress. The expenditure anticipated for 2004-05 is Rs. 1218.81 lakh. For 2005-2006, an amount of Rs. 1088.47 lakh is provided.

### Modernisation of Tanks Loan Assistance from NABARD

The project proposal is for modernising 44 minor irrigation tanks spread over in 23 Districts of Tamil Nadu at an estimated cost of Rs.14.66 crore with financial assistance of NABARD under Rural Infrastructure Development Fund (RIDF) benefiting 5,054 hectares. The State Government have accorded sanction to this project for Rs.14.66 crore. The Government in G.O.Ms.No.516 P.W.D. dated 24.12.2001 issued orders for executing the works through Water Users Association with the involvement of Non Government Organisations (NGOs).The anticipated expenditure for 2004-05 is Rs. 2229.07 lakh. For the year 2005-2006, a sum of Rs.2400 lakh is provided.

### Minor Irrigation

#### Formation of a tank across Perumpallam Oadai near K.Morur in Kanmavaipudur Village of Omalur taluk in salem District

The Government have accorded administrative sanction for Rs.4.95 Crore for the above work of Formation of a tank across Perumpallam Oadai near K.Morur in Kanmavaipudur Village of Omalur taluk in salem District. By implementing this scheme an Ayacut of 210 Acres of dry lands and 182.40 Acres of wet lands (by recharge of ground water) will be irrigated. An extent of 40.22 Acres of revenue promboke is to be acquired for this scheme. Work is proposed to be completed by March 2006.

### **Anicuts / Reservoirs having CCA less than 2,000 hectares. Shanmuganadhi Reservoir In Theni District**

This scheme contemplates the formation of a reservoir across Shanmughanadhi (Varattar) near Royappanpatti village in Uthamapalayam Taluk of Theni District. The scheme aims at irrigating 664 hectares of new dry land in Royappanpatti village of Cumbum Taluk and Mallingapuram, Chinnaovalapuram, Erasakkanaickanur, Kanniservaipatti, Alagapuri, Odaipatti, Seepalakottai villages in Uthamapalayam Taluk. The Government have sanctioned this scheme at a revised estimate cost of Rs.14.70 crore. The components of the scheme are an earth dam, masonry dam-non-overflow section, uncontrolled spillway, head sluice and canals with necessary structures. In this scheme, all works have been completed. The anticipated expenditure for 2004-05 is Rs. 33.91 lakh. A sum of Rs. 52.09 lakh is provided for the year 2005-2006.

### **Western Ghats Development Programme**

Western Ghats Development Programme is being implemented from 1986-87 onwards in 24 selected Taluks of Coimbatore, Erode, Dindigul, Virudhunagar, Tirunelveli and Kanyakumari Districts. Construction of check dams and formation of new ponds and improvements to supply channels are executed under this programme. The expenditure anticipated for 2004-05 is Rs. 45 lakh. A sum of Rs.29 lakh is provided for the year 2005-2006.

### **Minor Irrigation**

#### **Annual Plan Outlay for 2004-2005**

<b>Sl. No.</b>	<b>Name of Scheme</b>	<b>Outlay (Rs. in lakhs)</b>
1	Direction and Administration	0.01
2.	Investigation	272.40
3.	Tube wells scheme	299.56
4.	Other Minor Irrigation works	4308.49
5.	Minor Irrigations	596.13
6.	Western Ghat Development Programme	29.00
	<b>Total</b>	<b>5505.59</b>

### **Command Area Development Programme**

The Command Area Development Programme is implemented by the Agricultural Engineering Department as a centrally sponsored and equally shared programme on 50: 50 basis between the State Government and Government of India. At present, the programme is implemented in Cauvery Command, Parambikulam Aliyar Project, Tambirabarani River Basin Project, Palar-Poranthalar Project, Krishnagiri Reservoir Project, Gadana Ramanadhi Irrigation System, Nambiyar River Basin System, Patchaiyar River Basin System, Manimuthar Irrigation System, Aanaimaduvu System, Chinnar Reservoir system and Maruthanadi System. The programme has been completed in Lower Bhavani Project, Cumbum Valley Project, Periyar - Vaigai Project, Sathanur Reservoir Project, Amaravathy Reservoir Project, Kothayar-Chittar project and Thoppaiyar Project. The remaining projects will be covered as per the schedule approved by the Government of India.

The six major components of Command Area Development Programme are as follows:

- 1) Construction of Field Channel
- 2) construction of Field drain.
- 3) Reclamation of Water logged Saline and alkaline soil areas.
- 4) Rotational Water Supply.
- 5) Participatory Irrigation Management
- 6) Management Subsidy.

The Agricultural Engineering Department has also developed a water management strategy for the area below the sluice, which is crucial for agricultural production. Water management holds the key for optimisation of water use and maximisation of crop production.

#### *1. Construction of Field Channel.*

Construction of Field channel is done by considering the needs of the head reach farmers so that their interference is eliminated and the tail end farmers also get adequate irrigation water. This brings in equity in distribution of water to all the farmers in the entire sluice command. This has been achieved by using optimum flow concept. The unit cost is Rs.10000/- per ha. in all New Project areas including Cauvery Command. For old ayacut of Cauvery Command the unit cost of construction of field channel works is Rs.4400/- per ha. An area of 9.87 lakh ha. has been covered till 31.3.2004 out of total cultivable command area of 10.97 lakh ha. with Construction of field channel component in 12 command areas. During 2004-2005, this work was taken up in an area of 25897 ha. It is programmed to continue the scheme during 2005-2006 also.

#### *2. Construction of Field Drains.*

Under the construction of field drains component, drains from individual fields to Government drains (or) natural drains outside the outlet are executed. The expenditure on field drains is inclusive of costs of earthwork, road cuttings and drop structures, if needed to prevent erosion. The unit cost per ha. for this component is Rs.4000/-

#### *3. Reclamation of Water logged, saline & alkaline soil areas.*

In this component, the area affected by Waterlogging, saline and alkaline problems within the command area are identified and measures to reclaim those patches are taken up. At present this component is taken up in Tamirabarani River Basin Project and Krishnagiri Reservoir Project at an unit cost of Rs.15000/- per ha.

#### *4. Rotational Water Supply Works*

Rotational Water Supply or Warabandi is a system of equitable water distribution, by turns according to a predetermined schedule specifying the day, time and duration of supply to each farmer in proportion to his holding size in an outlet command. The rotational water supply schedule is prepared by the staff of Agricultural Engineering Department after executing the on farm development works and handed over to farmers for implementation. Rotational water supply was first

introduced in Lower Bhavani Project, Periyar – Vaigai Project and Cauvery Command in the year 1984-'85. An area of 8.92 lakh ha. has been covered under rotational water supply in Tamil Nadu in 12 command areas till March 2004. During 2004-2005, this work was taken up in an area of 53317 ha. It is programmed to continue the scheme during 2005-2006.

#### *5. Participatory Irrigation Management*

To implement On Farm Development Programmes and for ensuing equity in distribution of water, farmers participation is important. Agricultural Engineering Department is intensively encouraging itself in this work for the last 20 years. The task of handing over the responsibilities to the farmers is being implemented. In order to ensure farmers participation, farmers associations are formed on a three tier basis as follows.

- Farmers' Association - at sluice command level
- Farmers' Council - at distributory level
- Farmers' Federation - at project level

#### *6. Management Subsidy*

In order to sustain the farmers associations/ councils already formed and for the maintenance of the on-farm infrastructures created and to continue RWS (Warabandhi) for equitable water distribution, a financial assistance is provided in the form of one time functional grant to registered Farmers' Councils at Rs.540.00 per ha. shared equally by the Central and the State Governments. To avail this, farmers have to contribute Rs.60.00 per ha. Out of the 698 Farmer's Councils registered, an amount of Rs.1626.514 lakhs has been released as management subsidy till March 2005 to 663 registered Farmers' Councils to maintain the infrastructure created under the Command Area Development Programme.

#### *7. Scheme for improving the efficiency of Agricultural Pump sets*

The energy efficiency in farm sector pump sets is poor as the farmers are using higher capacity pump sets than the required level or using old pump sets. They have poor discharge compared to their horsepower. The improper installation of switchboards, earth and allied accessories also increases power consumption.

The efficiency of the electric pump sets can be increased by:

- Replacing the old pump sets with new energy efficient ISI certified latest technology pump sets.
- Providing proper electric accessories, mains, earths etc
- Providing facility for ground water recharging by taking up Rain Water Harvesting measures around the well.
- Decreasing the power consumption by reducing the pumping hours by providing Micro Irrigation facility, which allows drawl of less water from the wells.
- Ensuring economy in using ground water by 30%.
- Increasing the farm yield by the use of micro irrigation and fertigation cum herbigation so that the farmer will have higher income.

- Revised cropping pattern by promoting integrated farming to increase the income of farmers. Reduced energy, water, pesticide and fertiliser consumption will also increase profitability of farmers.

It was therefore proposed to cover the dark and grey blocks of the state with this energy efficiency programme for electric farm pump sets based on the study conducted by Tamilnadu Agricultural University and Tamil Nadu Electricity Board.

During 2003-04, a pilot project have been taken up in three transformer areas in Theni, Coimbatore and Villupuram districts to study the effect on the consumption of energy and a total of 34 pumpsets have been energised so far at a cost of Rs.11.12 lakhs under this programme. During 2004-05, the programme was implemented in a large scale all over the state at a cost of Rs.919.32 lakhs covering 15309 pumpsets. It is proposed to continue this programme during 2005-06 also.

### Outlay for CADP

An amount of Rs.2069.13 lakhs is proposed for the year 2005-06 as a state share for implementation of Command Area Development Programme works.

### CADP- outlay 2005-06

S.No.	Name of the Scheme	State (Rs.in lakhs)	Centre (Rs. in Lakhs)
1.	CADP - PAP	404.15	754.01
2.	CADP – Cauvery	793.99	1533.71
3.	CADP – Tech. Cell	10.03	20.05
4.	CADP – Tamiraparani	314.70	575.14
5.	CADP - Krishnagiri	31.96	40.94
6.	CADP - Palar Porandalar	55.60	84.00
7.	CADP - Gadana ad Ramanadhi	27.13	54.25
8.	CADP – Nambiyar	27.13	54.25
9.	CADP - Tamiraparani	27.13	54.25
10.	CADP – Krishnagiri	54.31	108.61
11.	CADP – Palar Porndalar	13.60	27.19
12.	CADP – Chinnar	13.60	27.19
13.	CADP – Maruthanadhi	13.60	27.19
14.	CADP - Gadana ad Ramanadhi	45.95	91.90
15.	CADP – Nambiyar	48.80	97.60
16.	CADP – Patchiyar	45.95	91.90
17.	CADP – Manimuthar	75.30	150.60
18.	CADP – Anaimadavu	20.78	41.55
19.	CADP – Chinnar	24.64	49.27
20.	CADP – Maruthanadhi	20.78	41.55
21.	CADP - Gadana ad Ramanadhi	0.00	157.51
22.	CADP – Cauvery	0.00	1295.30
23.	CADP - Tamiraparani	0.00	479.75
24.	CADP – Krishnagiri	0.00	0.01
	Total	2069.13	5857.74