Public Works Department
Irrigation
Demand No. 40
Policy Note 2010-2011

INDEX

1.0. WATER RESOURCES DEPARTMENT

1.1. INTRODUCTION

"வான் நின்றுலகம் வழங்கி வருதலால்
தான்அமிழ்தம் என்றுணரற் பாற்று"

"Sustenance of Life in the World is due to the rain which is the elixir blessed by the nature".

The Water Resources Department of Tamil Nadu has been functioning with emphasis to maintain the time tested irrigation structures and to evolve new irrigation schemes, taking into consideration the compelling circumstances to increase food production in keeping pace with the growing population.

Water being the lifeline of all living beings is a vital resource for human life. Irrigated agriculture is the prime factor for our country to achieve self–sufficiency in food production. In so far as Tamil Nadu is concerned, the State is moving forward in agricultural sector. This is be possible because of irrigation structures created from time immemorial.

1.2. The Public Works Department is divided into two wings viz., the Water Resources Department and Buildings Organisation (Public Works Department) from 12.2.2008. The Water Resources Department functions on river basin framework. The state has been sub-divided into four Regions, each headed by a Chief Engineer, located in Chennai, Trichy, Madurai and Coimbatore. These Chief Engineers are the Basin Managers for the defined basin boundaries in their jurisdiction. Apart from this, three Chief Engineers stationed in Chennai are carrying out specialized functions and they are designated as Plan Formulation; Operation and Maintenance; Design, Research and Construction Support. Further, the Institute for Water Studies and State Ground and Surface Water Resources Data Centre are headed by two Chief Engineers, Chennai. The Engineer-in-Chief, Water Resources Department and the Chief Engineer (General), Public Works Department coordinates the functions of these nine Chief Engineers and acts as the Technical Head of this Department. Irrigation service delivery and management, development and control of

all the Major, Medium and Minor Irrigation Systems are in the domain of this department.

1.3. IRRIGATION INFRASTRUCTURE AND STATUS

Tamil Nadu is the southern end State in the Indian Peninsula. Most of the rivers are inter-state by nature and their flows depend to a large extent from the upper riparian states. The total surface water potential of the State has been estimated as 853 TMC which includes 261 TMC contributed by the neighbouring States and this has been fully harnessed. There are 75 large and 7 small dams in the State with a combined storage capacity of 233.20 TMC. Further, there are 39202 tanks in the State, out of which 13710 tanks are under the control of the Water Resources Department.

1.4. There are 34 river basins in the State which have been grouped into 17 major river basins and 127 sub-basins. The average rainfall of the State is 911.6 mm. The spatial and temporal variations in rainfall, along with the difference in

topographic and vegetation characteristics have led the river basins with widely varying water availability with reference to space and time.

1.5. Net area irrigated in the State during 2008-2009 is about 29.31 lakh ha. Out of this, canal irrigation accounts for 7.66 lakh ha., tank irrigation accounts for 5.40 lakh ha., open wells and tube wells account for 16.14 lakh ha. and the balance 0.11 lakh ha. get irrigated through other sources. The gross area irrigated in the State is about 33.93 lakh ha. Action has been initiated to improve the water use efficiency of the irrigation systems through concepts such as Benchmarking, Canal Automation etc., which would pave the way for optimum utilisation of water to ensure sustainable development.

1.6. GROUND WATER RESOURCE

Ground Water is a precious resource. Though it is replenishable, the balance between extraction and recharge decides the quantity and quality of this resource. It is estimated that out of the total available resources in the State, 85% has been developed for utilisation. Among the total

385 blocks in the State, 142 have been classified as over-exploited, 33 as critical, 57 as semi-critical and 8 as saline. The remaining 145 blocks alone are considered safe. It, therefore, becomes necessary that the ground water is not exploited any further. This can be done through continuous monitoring and effective intervention. In this direction, efforts are being taken to maintain the quality of ground water. Also by the construction of Artificial Recharge Structures, effective ground water recharge is accomplished.

2.0. IRRIGATED AGRICULTURE MODERNISATION AND WATER-BODIES RESTORATION AND MANAGEMENT (IAMWARM) PROJECT

This project is implemented with the assistance of World Bank with an outlay of Rs.2,547 crore, over a period of six years from 2007 to benefit 6.17 lakh ha. involving Water Resources Department and other line Departments of Government and the Tamil Nadu Agriculture University.

2.1. OBJECTIVE OF THE PROJECT

The IAMWARM project aims to improve the service delivery of irrigation systems and increase the productivity of irrigated agriculture with effective integrated water resources management in a sub-basin framework.

2.2. KEY COMPONENTS OF THE PROJECT

2.2.1. Irrigation systems modernisation in a sub-basin framework

This component aims to improve bulk water delivery through modernisation of irrigation systems in 63 selected sub-basins with an ayacut of 6.17 lakh ha. Activities involve tank system modernisation by restoring and repairing water bodies and improving canal irrigation system through repair and rehabilitation.

2.2.2. Agricultural Intensification and Diversification

This component aims to increase the productivity of agriculture-related activities

through improved agricultural intensification and diversification of crops, micro irrigation, Animal Husbandry and Fisheries.

2.2.3. Institutional Modernisation for Irrigated Agriculture

It is sought to improve the institutional capacity for irrigation service delivery through the Water Resources Department and the Water Users Associations (WUAs) with technically better designs and in a socially sustainable manner. The Water Users Associations would be utilized to implement Participatory Irrigation Management (PIM) involving farmers.

2.2.4. Water Resources Management

The institutional arrangements and capacity building for sustainable water resources management is proposed to be improved by the Water Resources Department through the creation of a State Water Resources Management Agency (SWaRMA). Apart from this, water research would be taken up on relevant

topics through Irrigation Research Fund (IRF).

2.3. Project Implementation (2007-2010)

In the first phase, implementation was initiated during 2007-2008 in selected 9 sub-basins covering an extent of 2.895 lakh ha. with an outlay of Rs.714.94 crore in respect of all Departments put together. In the first year itself, works have been successfully commenced by all the Departments. During the financial year 2008-2009, 16 more Sub-basins with an additional ayacut of about 0.672 lakh ha. were taken up. Another 30 Sub-basins covering an extent of 1.821 lakh ha. are being taken up under Phase-III. The Government have accorded administrative sanction for the works in 26 sub-basins. Clearance from World Bank is awaited for the remaining works in 4 sub basins.

2.3.1. Water Resources Department

Phase-I (9 Sub Basins)

The works under 76 packages were taken up with an outlay of Rs.450.10 crore and works for 52 packages have been completed. The remaining works under 24 packages are in progress. Thereby modernisation of 1124 Tanks, rehabilitation of 206 Anicuts and improvement of 2748 km of Supply Channels have been completed till March, 2010.

Phase- II (16 Sub Basins)

Bids have been finalised as per World Bank procurement guidelines for all the 43 packages for an amount of Rs.189.05 crore and the works are in progress. Modernisation of 319 Tanks, rehabilitation of 73 Anicuts and improvement of Supply Channels for a length of 245 km have been completed till March, 2010.

Phase- III (30 Sub Basins)

Out of 30 sub basins, administrative sanction has been accorded for the works in 26 sub basins. Clearance from World Bank is awaited for the remaining 4 sub basins. Under Phase-III, rehabilitation of 1674 tanks, 255 anicuts and 2781 km length of supply channels are programmed to be taken up.

Formation of Water Users Association

Under Participatory Irrigation Management in Phase-I and Phase-II, out of 1333 Associations, elections for 1260 were conducted and in Phase-III out of 1028 Associations, elections for 1009 were conducted. For the remaining Associations, election will be conducted shortly.

2.3.2. Agricultural Engineering Department

Micro Irrigation systems have been installed in 4451 ha. and 1078 farm ponds have been constructed in the Phase-I and Phase-II. In the Phase-III Sub-basins an area of 6321 ha. under Micro Irrigation and

389 Nos. of Farm Ponds have been proposed.

2.3.3. Agriculture Department

Crop demonstrations for paddy, pulses, maize, groundnut etc. were conducted in 24574 ha. in the 25 sub-basins. Significant improvement in yield upto 52% in paddy (SRI), 84% in Maize and 69% pulses was achieved. An impact area of 195768 ha. has been identified and 175864 ha. was covered.

Exceptional yields were recorded in SRI and pulses demonstrations in the following areas:-

- Anaivariodai Sub-basin, Nakkampadi Village in Ariyalur District – Paddy yield 16750 Kg per ha. as compared to 7416 Kg per ha. in the previous year.

- Chinnar Sub-basin, Ladapuram Village in Perambalur District – Yield of Pulses (Black gram) 1312 Kg per ha. as compared to 710 Kg per ha. in the previous year.

2.3.4. Horticulture Department

Both by way of Diversification and Transfer of Technology, an additional area of 15644 ha. has been brought under fruits, vegetables and other horticultural crops as on December, 2009 covering 25 sub-basins.

2.3.5. Tamil Nadu Agricultural University

The new System of Rice Intensification (SRI) is one of the latest technologies under IAMWARM through the Tamil Nadu Agricultural University. Under SRI Technique, paddy yield has shown improvement of 40-80 percentage over the conventional practice. In some areas, exceptional yields have been achieved.

- During 2009-2010, in Pennaiyar Sub-basin in Thiru. Nanjundan's field in Keeranapalli village in Krishnagiri District, a maximum yield of 13.6 tonnes per ha. was recorded compared to 5.9 tonnes per ha. under conventional method of

cultivation. It is significant achievement.

During 2010-2011, it is planned to cover 2818 ha under SRI demonstrations.

To increase the pulse production, Improved Production Technology in garden land pulse and rice followed by pulse has been demonstrated in project area. Significant yield increase has been achieved.

- Through Improved Production Technology demonstration, Thiru. Devanathan of Panayapuram village in Villupuram District in Varahanadhi Sub-basin realised the pulse yield of 1875 Kg per ha. when compared to conventional yield of 750 Kg per ha.

During 2010-2011, Improved Production Technology will be demonstrated in Pulse (4149ha.), Groundnut (584ha.), Chillies (320ha.), Semidry Rice (155ha.), Cotton (125ha.), Vegetables (22ha.) and Sunflower (35ha.).

Adoption of Precision Farming in various crops has led to significant yield increase.

- In Palar Sub-basin, Vavipalayam village in Tiruppur District, the farmer Thiru. Kannimuthu obtained a yield of 13 tonnes of Bellary Onion from 70 cents.

During 2010-2011, Precision Farming will be taken up in Banana (80ha.), Vegetables (105ha.), Sugarcane (210ha.), Flowers (10ha.), Tapioca (20ha.) and Turmeric (33ha.) on an experimental basis.

2.3.6. Agricultural Marketing

To assist the farmers to get better price so far 481 Commodity Groups for diversified crops like Chillies, Maize, Groundnut, Banana etc, have been formed. Besides, the Memorandum of Understanding between farmers and companies for different commercial crops like maize, mango, chillies etc., have been facilitated.

2.3.7. Animal Husbandry Department

To increase the conception rate, Infertility and total Veterinary Health Care, camps

were conducted. To improve milk yield, the availability of green fodder was increased and an additional area of 5216 ha. was brought under fodder cultivation.

2.3.8. Fisheries Department

The Department has promoted Aquaculture in 438 farm ponds as additional income generating activities to farmers. Carp seed rearing in 74 units of net cages has also been promoted. Ten ornamental fish culture units have been established to promote rural employment and income to farmers.

2.4. Water Walks, IAMWARM Days with all line Departments and Change Management Workshops are being conducted to ensure convergence and participation of officers and farmers on their needs and solutions. Further, Skill Development Management is being proposed amongst Water Resources Department Engineers to ensure better service delivery and management of scarce water.

2.5. Project Implementation (2010-2011)

The implementation of IAMWARM Project in the Sub-basins under Phase-III :-

Sl. No	Sub Basin	District
1.	Araniyar	Tiruvallur
2.	Kosasthalaiyar	Tiruvallur and Vellore
3.	Nallavur	Villupuram
4.	Ongur	Kanchipuram, Villupuram and Tiruvannamalai
5.	Mirukandanadhi	Krishnagiri
6.	Kambainallur	Dharmapuri
7.	Kovilar (Kottapattikallar)	Dharmapuri
8.	Pambanar Verattar	Tiruvannamalai
9.	Gadilam	Cuddalore and Villupuram
10.	Pambar to Tirukoilur	Villupuram and Tiruvannamalai
11.	Thurinjalar	Tiruvannamalai and Villupuram
12.	Gomukinadhi	Villupuram and Cuddalore

13.	Kanal Odai	Virudhunagar, Sivagangai and Madurai
14.	Uthirakosamangai	Ramanathapuram
15.	Vembar	Thoothukudi, Ramanathapuram and Virudhunagar
16.	Palar	Ramanathapuram
17.	Girdhamal	Sivagangai, Virudhunagar, Madurai and Ramanathapuram
18.	Lower Gundar	Ramanathapuram, Virudhunagar
19.	Deviar	Tirunelveli, Virudhunagar
20.	Nagariyar	Virudhunagar
21.	Sevalaperiyar	Virudhunagar
22.	Uppathurar	Thoothukudi and Virudhunagar
23.	Vallampatti	Virudhunagar, Tirunelveli and Thoothukudi
24.	Vaippar River	Thoothukudi and Virudhunagar
25.	Uppodai	Tirunelveli and Thoothukudi
26.	Hanuman Nadhi (Nambiyar)	Tirunelveli and and Kanyakumari

27.	Karumeniar	Tirunelveli and Thoothukudi
28.	Salikulamar	Thoothukudi
29.	Korampallam River	Thoothukudi
30.	Theniar	Theni

During 2010-2011, in the Phase-III, 30 sub-basins covering an extent of 1.821 lakh ha. are proposed to be taken up for rehabilitation. The outlay for 2010-2011 is Rs.463.23 crore for all the departments put together. DPRs for 26 sub-basins were cleared by the World Bank and clearance for 4 DPRs is awaited. Thus, most of the works in the sub-basins covering all the 3 Phases under the IAMWARM project will have been initiated in 2010-2011. During the financial year 2010-2011, proposal for 5 more sub-basins [(1) Cheyyar and Kiliyar (2) Kayalkudi (3) Paralayar (4) Cooum and (5) Adayar] with an ayacut of about 0.782 lakh ha. are taken up.

3.0. DAM REHABILITATION AND IMPROVEMENT PROJECT (DRIP)

There is a constant need to strengthen, safeguard and maintain the health status of dams due to certain general factors like ageing and possible low compliance with Dam safety standards and practices etc. by carrying out essential maintenance works.

Keeping in view of this, Dam Rehabilitation and Improvement Project with World Bank assistance through Central Water Commission is proposed to be taken up over a period of 6 years. The project aims at restoring the capacity of dams, achieve effective utilization of stored water and manage the long-term performance of the dam. Tamil Nadu is one among the five States selected by the World Bank for participation in this project.

The 3 main components of the project are:

(a) Rehabilitation and Improvement of Dams and Associated appurtenances

This will focus on structural or non - structural measures of the dams, hydrological assessment, sediment management and other measures required to improve the safety and operation of the dams and associated appurtenances.

(b) Dam safety Institution strengthening

This will take care of legal regulatory and technical frameworks for dam safety assurance.

(C) Project Management

This will look into the application of modern design practices and construction supervision according to international practices.

The World Bank in its Aid Memoire dated 10.11.2009 has tentatively finalised the Project cost for Tamil Nadu as Rs.744.96 crore to rehabilitate 66 dams of Water Resources Department and 38 dams of Tamil Nadu Electricity Board. This Project is expected to be sanctioned in the current Year (2010-2011). For the first year, 12 Water Resources Department dams and 5 Tamil Nadu Electricity Board dams are proposed to be taken up for rehabilitation.

The World Bank has initially approved Rs.75 lakhs as retroactive fund for carrying out the preparatory works like training, advertisement and consultancy before the implementation of the project works. Administrative sanction has been accorded for the above preparatory works.

4.0. IRRIGATION SCHEMES

Water- the precious source which is treated as the national wealth, is the most critical input for agriculture. Unless the rain water is effectively stored and managed, it would not be possible to efficiently utilise the potential created. As

the monsoons are unpredictable, it is essential to store all the water received during monsoons to augment the storage. It is, therefore, imperative to ensure the proper upkeep of the irrigation structures. It is equally important that the water is utilized optimally, especially in irrigation.

In the Water Resources Department, irrigation systems are classified into three types as Major, Medium and Minor irrigation systems. A total of about 21.0 lakh ha. of ayacut are benefited through the irrigation system.

Tanks also form part of the irrigation systems. 13710 tanks are under the control of Water Resources Department. Keeping the importance of irrigation water in mind, the Government ensures adequate measures for the upkeep of the irrigation systems under the management control of the Water Resources Department resorting to modernisation and rehabilitation works.

For this purpose, apart from State funds, necessary funds/ grants are mobilized from the Government of India and from the funding agencies like NABARD, World Bank etc.

Recently completed irrigation schemes:-

Nanganjiyar Reservoir Project, Shenbagathope Reservoir Project, Irukkankudi Reservoir Project, Nallathangal Odai Reservoir Project, Andiyapanur Odai Reservoir Project, Kuppanatham Reservoir Project, Malattar Anicut, Tank across Nayodai, Tank across Ramakal Odai, 18th Canal Anicut, Tank across Sirumalayar and Varattar Reservoir etc., have been completed and there by an extent of 19903 ha. ayacut, irrigation facility has been ensured.

The five schemes completed during 2009-2010:-

- Construction of Bed Dam and Dividing Wall across Palar near Kavasampattu Village in Vellore district at a cost of Rs.6.50 crore to benefit an ayacut of 520 ha. – (Works completed in July 2009).

- Providing dividing wall and construction of anicut across Koundanyanadhi near Chitthathur in Vellore district at a cost of Rs.4.50 crore to benefit an ayacut of 844 ha. – (Works completed in October 2009).

- Construction of vented causeway across Ponnai river in Melpadi village of Katpadi taluk of Vellore district at a cost of Rs.1.50 crore – (Works completed in July 2009).

- Repairs to Puthen Dam in Kanyakumari District at a cost of Rs.1.50 crore to benefit an ayacut of 31970 ha. (Works completed in March, 2010).

- Formation of a new tank across Aswamanadhi river in Thottappanaikanur village of Usilampatti taluk in Madurai District at a Cost of Rs.5.60 crore benefiting an ayacut of 153.44 ha. (Works completed in March, 2010).

4.1. ON-GOING IRRIGATION SCHEMES

Eighteen irrigation schemes are being presently implemented by the Government under medium and minor irrigation systems at a cost of Rs.355 crore. An extent of 44819 ha. ayacut are to be benefited under these schemes.

4.1.1. STATE FUND

- Irrigation Facilities to 58 Villages in Usilampatti Taluk in Madurai district at a Project cost of Rs.74.60 crore to benefit an ayacut of 925 ha. – 95% of Works Completed.

- Tank across Mathalapallam River in Dharmapuri district at a Project cost of Rs.14.15 crore to benefit an ayacut of 445 ha. – 90% of Works Completed.

- Reservoir across Mambazha-thuraiyar in Kanyakumari district at a Project cost of Rs.20.97 crore to benefit an ayacut of 339 ha. – 95% of Works Completed.

- Formation of new tank across Sangiliyankoil Odai-Sinnathu Odai in Anjukulipatti village in Dindigul District at a Project cost of Rs.4.20 crore to benefit an ayacut of 140 ha. – 85% of Works Completed.

- Reconstruction of bridge at mile 26/5.420 of Lower Bhavani main canal in Kurumandur village in Gobi taluk of Erode district at a Project cost of Rs.0.60 crore – 75% of Works Completed.

- Bathalapalli Reservoir Project across Malattar in Vellore district at a Project cost of Rs.29.55 crore to benefit an ayacut of 1125 ha.– 40% of Works Completed.

- Rehabilitation and Strengthening of Wellington Reservoir in Cuddalore District at a Project cost of Rs.20.00 crore to benefit an ayacut of 9732 ha. – 56% Work Completed.

- Construction of Platinum Jubilee Memorial and Celebration of Platinum Jubilee of Stanley Reservoir at Mettur at a cost of Rs.1.05 crore – Preliminary works under progress.

- It is proposed to provide a new Trash Rack arrangement at about 130m upper side of the Tunnel entry at Thekkady Head Sluice in the Leading Channel of Periyar Lake for maximum drawal of water from Mullai Periyar Dam to Vaigai Dam at a Project cost of Rs. 0.60 crore.

- Renovation and Rehabilitation of Perungudi Tank in Kanchipuram District at a Project Cost of Rs.0.97 crore - 58% of Works Completed.

- Modernisation of Irrigation Canals from Poolavari anicut across Thirumanimuthar to Chithaneri in Agrahara Poolavari Village of Salem Taluk and District at a Project Cost of Rs.0.78 crore – 87% of Works Completed.

4.1.2. NABARD LOAN ASSISTED SCHEMES :

132 schemes at a Project cost of Rs.806.79 crore were taken up under NABARD RIDF IX to XV and 94 schemes have so far been completed at a cost of Rs.616.96 crore. Remaining 38 schemes are in progress of which 26 schemes are flood protection works.

The various stages of the remaining 12 schemes are as below:-

RIDF X

- Excavation of supply channel from Badethalav tank to Vennampalli in Dharmapuri District at a Project Cost of Rs.13.50 crore to benefit an ayacut of 1149 ha. – Entire channel work completed except 2 numbers of NH culvert which are in progress.

RIDF XI

- Construction of Anicut across Vilangudi Odai in Perambalur District at a Project Cost of Rs.0.35 crore to benefit an ayacut of 70 ha. – Works are in progress.

RIDF XIII

- Rehabilitation of GA canal from 58.68 km to 92.20 km in Orathanadu in Thanjavur District at a Project Cost of Rs.26.06 crore to benefit an ayacut of 2700 ha. – 67% of Works Completed.

- Rehabilitation of Kalingarayan channel from mile 0/0 to 56/5.5 in Erode District and Taluk at a Project Cost of Rs.11.62 crore to benefit an ayacut of 6371 ha. – Preliminary works in progress.

- Rehabilitation of Grand Anicut Canal and Modernisation of Kallaperambur Eri at a Project Cost of Rs.119.67 crore to benefit an ayacut of 21348 ha. – Overall 79% of Works Completed.

RIDF XV

- Excavation of supply channel from Jerthalav channel at L.S. 5690m to feed Totlampatti tank, Papparapatti tank and 15 other tanks in Palacode and Pennagaram Taluks of Dharmapuri District at a Project Cost of Rs.6.29 crore to benefit an ayacut of 475 ha. – 51% of Works Completed.

- Rehabilitation and Improvements to Neikkarapatti Tank supply channel in Kondalampatti village of Salem taluk and District at a Project Cost of Rs.2.70 crore – Work under progress.

4.2. WORKS TO BE COMMENCED

4.2.1. NABARD LOAN ASSISTED SCHEMES

RIDF XV

- Rehabilitation of Arakkankottai and Thadapalli Channels in Gobi taluk of Erode District at a Project Cost of Rs.17.45 crore.

- Rehabilitation of Thovalai Channel and Radhapuram channel including tanks in Kanyakumari District at a Project Cost of Rs.22.50 crore.

- Increasing the carrying capacity of Palayamparavoo channel and PT Rajan Channel in Cumbum valley of Theni District at a Project Cost of Rs.10.08 crore.

- Construction of Bed Dam across Vaigai river near Manthivalasai to feed Kalari Channel and RMC feeding tanks at a Project Cost of Rs.14.20 crore.

- Renovation of Ramanathapuram Big Tank in Ramanathapuram District at a Project Cost of Rs. 9.73 crore.

4.3. MINOR IRRIGATION TANKS UNDER NABARD

- 498 tanks at a Project cost of Rs.136.36 crore were taken up and completed under **RIDF IX to XI.**

- Now, 27 tanks in Sivagangai District at a Project Cost of Rs.5.63 crore have been taken up under RIDF XIII and are in progress.

4.4. DESILTING OF CHANNELS AND REHABILITATING THE DAMAGED MASONRIES IN CAUVERY DELTA DISTRICTS

Of the 225 works taken up at a cost of Rs.30.28 crore for rehabilitating the damaged masonries in Cauvery Delta for the year 2008-2009, 223 works have been completed and the remaining 2 works are in progress.

378 works to desilt the drains and channels in Cauvery Delta areas at a cost of Rs.12 crore have been sanctioned for the year 2010 and the works have been commenced.

4.5. PART II SCHEMES

4.5.1. YEAR 2008-2009

The Government have accorded approval of Rs.7.33 crore for 28 works. 27 works have been completed and the remaining work of construction of New Inspection Bungalow with 4 suites in Mamallapuram at a Project cost of Rs.0.45 crore is nearing completion.

4.5.2. YEAR 2009-2010

The Government have accorded approval of Rs.7.34 crore for 43 works comprising 8 Minor Irrigation schemes and 35 other schemes. So far, 25 works have been completed. 13 works are in progress and 5 works will be commenced soon.

4.5.3. Part II Schemes 2010-2011

Sl. No	Description of the Schemes	Amount Rs. in lakhs
	Secretariat	
1.	Purchase of one file server, 52 desktop Computers and other necessary peripherals for installing Electronic File Processing System.	37
	Water Resources Department	
2.	Formation of a new pond across Malaiyatha Odai and diverting flood water to Athupalayam Reservoir in Aravakurichi taluk of Karur District.	72
3.	Restoration of Sembakulam anicut in Reddiyampadi village of Palani taluk in Dindigul District.	30

4.	Reconstruction of Muthankulam anicut across Santhanavardhni river at Kovilur village of Dindigul District.	35
5.	Construction of Uppukulam anicut across Santhanavardhni river in Vembarpatti village of Dindigul taluk and District.	37
6.	Reconstruction of old anicut collapsed body wall for Mannarai tank in Tirupputhur District.	18
7.	Permanent Restoration of flood damages to Poovandhi tank in Manamadurai taluk of Sivagangai District.	66
8.	Construction of Mallayagoundanpatti anicut across Vanjinadhi in Mallanampatti village of Nilakottai taluk of Dindigul District.	22

9.	Construction of out let arrangements on the Upstream sluice No.1 of Vadakuravaipattu channel under Gadana Reservoir system in Ambasamudram taluk of Tirunelveli District.	8
10.	Construction of outlet arrangements on the Upstream of sluice No. 1 of Old Arasapattu channel under Gadana Reservoir system in Ambasamudram taluk of Tirunelveli District.	5
11.	Rehabilitation of Main anicut constructed across Arjuna River and Pick up anicut constructed across Nedunkulam surplus course and supply channel reach I & II and cross Masonry works feeding Thiruthangal big tank in Sivakasi taluk of Virdhunagar District.	15
12.	Construction of anicut across Malattar Odai in Vengampatti village in Ettayapuram taluk in Thoothukudi District.	30

13.	Improvements to approach road to Karuppanadhi reservoir under Karuppanadhi system near Krishnapuram village of Tenkasi taluk of Tirunelveli District.	50
14.	Rehabilitation of regulator for Kondamvari drain at Mile 97/0 in left bank of Aganda Cauvery in Manamedu village, Thottiam taluk of Trichy District.	90
15.	Construction of a grade wall across Pandavayar river at mile 73/65 in Kamalapuram Village in Kudavasal Taluk of Tiruvarur District.	40
16.	Construction of culvert at mile of 34/5 distributory of Mettur East Bank Canal in Thiruchengode Taluk of Namakkal District.	5

17.	Purchase of high speed fiber boat services to Stanley Reservoir in Mettur.	10
18.	Rehabilitation of Thambipettai anicut in Cuddalore Taluk of Cuddalore District.	25
19.	Rehabilitation of Chellampattu anicut in Sankarapuram Taluk of Villupuram District.	30
20.	Modernisation and participatory irrigation management of Anicut Manikuppam tank in Cheyyur taluk of Kanchipuram District.	105
	Total	**730**

4.5.2.1. SCHEMES IN PROGRESS

1. Reconstruction of Section Office Building at Ambur in Vaniyambadi taluk of Vellore District at a Project Cost of Rs.0.06 crore - 85% of Work Completed.

2. Improvements to Goddar Rest House at Natrampalli in Vaniyambadi taluk of Vellore District at a Project Cost of Rs.0.05 crore - 84% of Work Completed.

3. Construction of Section Office Building at Arakkonam in Arakkonam taluk of Vellore District at a Project Cost of Rs.0.06 crore - 50% of Work Completed.

4. Construction of Section Office Building-cum-rest shed at Poiney anicut in Wallajah taluk of Vellore District at a Project Cost of Rs.0.09 crore -75% of Work Completed.

5. Construction of Section Office Building at Kalavai in Arcot taluk of Vellore District at a Project Cost of Rs.0.06 crore - 75% of Work Completed.

6. Construction of Irrigation Assistant quarters (Twin type) in Palar anicut section with protection wall in Vellore District and taluk at a Project

Cost of Rs.0.075 crore – Works are in progress.

7. Renovation of Maduranthagam High Level Canal Project House at Karunguzhi in Maduranthagam taluk of Kancheepuram District at a Project Cost of Rs.0.075 crore - Work is in progress.

8. Rehabilitation of Pootai anicut in Sankarapuram taluk of Villupuram District at a Project Cost of Rs.0.44 crore – 57% of work completed.

9. Construction of Office Building for River Conservancy Sub-Division at Musiri in Musiri taluk of Trichy District at a Project Cost of Rs.0.12 crore – 35% of Work completed.

10. Construction of Sub Division Office at Thiruthuraipoondi in Thiruthuraipoondi taluk of Tiruvarur District at a Project Cost of Rs.0.15 crore – 30% of Work completed.

11. Construction of Masonry wall across Vinnamangalam Eri surplus course in Cheyyar taluk of Tiruvannamalai District at a Project Cost of Rs.0.15 crore to benefit an ayacut of 21.66 ha. – Work is in progress.

12. Construction of grade wall across Veeracholan river at LS 101.40km to feed A3 Maruthuvakudi and Sathanur channel in Thiruvidaimarudur village and taluk of Thanjavur District at a Project Cost of Rs.0.77 crore to benefit an ayacut of 374.16 ha. – 25% Work completed.

13. Construction of Section Officer Quarters at Chitode in Erode District and taluk at a Project Cost of Rs.0.09 crore – Work is in progress.

4.5.2.2. SCHEMES TO BE COMMENCED

1. Rehabilitation of Sempoondi anicut near Kiliyanagar village in Maduranthagam taluk of

Kancheepuram District at a Project Cost of Rs.1.00 crore.

2. Construction of Division office Building for Sarabanga Basin Division at Namakkal of Namakkal District and taluk at a Project Cost of Rs.0.42 crore.

3. Grouting of Hillock portion in left flank of Stanley Reservoir at Mettur at a Project Cost of Rs.0.60 crore.

4. Conversion of Drop into Regulator across South Bank canal across the river cauvery at mile 16/2+340 feet in Marudur village of Kulithalai taluk in Karur District at a Project Cost of Rs 0.27 crore to benefit an ayacut of 256.10 ha.

5. Construction of Syphon Aqueduct across Uyyakondan Channel at Mile 24/3 for providing drainage facilities to Pappakkurichi village in Trichy District and taluk at a Project Cost of Rs. 0.35 crore.

4.6. CENTRALLY SPONSORED SCHEMES

Rehabilitation and improvement works in Minor water sources under National Agriculture Development Programme (NADP – RKVY)

Year 2007-2008:

- Under the Irrigation component of the NADP, 11 works at a cost of Rs.12.08 crore were sanctioned for the year 2007-2008 and taken up for execution during 2008-2009. Out of this, 10 works have been completed and the remaining following one work is in progress:-

- Improvement and Rehabilitation of Public Works Department Anicuts in Chinnar Minor Basin in Palacode taluk of Dharmapuri district at a project cost of Rs.0.98 crore – 63% works completed. On completion of this project, a gap of 874.8 ha. is to be bridged resulting in improved food production of 4321.51 MT.

Year 2008-2009:

- Rehabilitation of Shieldkal and its 40 tanks in Sivagangai District was taken up at a cost of Rs.5.39 crore - Works completed.

- By implementation of this project, a gap of 94.265 ha. will be bridged resulting in improved food production of 2971 MT.

Year 2009-2010:

- Government have sanctioned Rs.1.50 crore for two works, namely Rehabilitation of irrigation systems of Noyyal anicut in Tiruppur District and Eraiyur anicut in Tiruvannamalai District. Works are in progress.

- By implementing these projects, a gap of 198.20 ha. will be bridged resulting in additional increase in food production of 929 metric tonnes of paddy besides 753 tonnes of food production in the second and third crop period.

5.0. FLOOD MITIGATION SCHEMES

Devastation by floods is an annually recurring phenomenon. Certain areas in Tamil Nadu are very vulnerable to floods and there is a great risk of damage to life and property of the people and to the State's assets like irrigation infrastructure, roads, etc. To alleviate the difficulties, flood mitigation schemes have been identified and taken up with the assistance of Government of India and NABARD loan.

5.1. SCHEMES TAKEN UP WITH NABARD LOAN

Sl. No.	Name of Scheme	Estimate Amount (Rs. in crore)	Remarks
1.a	**RIDF XIII**-23 Nos. of Flood Protection Works to Cauvery and Coleroon river banks in Karur, Trichy and Perambalur districts.	207.54	Works in Progress.

b	2 Nos. of Flood protection works in Madurai city.	12.91	Works in Progress.
2	**RIDF XV**- Flood Protection Works in Kudamurutti river and Uyyakondan channel in Trichy district.	45.60	Works in Progress.

5.2. PROPOSALS ON FLOOD MANAGEMENT PROGRAMME TO BE IMPLEMENTED WITH THE ASSISTANCE OF GOVERNMENT OF INDIA

Based on the guidelines of Government of India, 7 schemes for a value of Rs.692.44 crore have been sent to Ministry of Water Resources, Government of India in July 2008 for approval under Flood Management Programme.

The status of the schemes are as follows:-

5.2.1. Schemes cleared by Government of India

Sl. No.	Name of Scheme	Estimate Amount (Rs. in crore)	Remarks
1.	Flood Protection to Araniyar river at upstream and downstream of A.N.Kuppam Anicut and downstream of Lakshmipuram Anicut to Pulicat creek in Tiruvallur District.	12.41	Investment clearance has been accorded by the Union Planning Commission. Administrative sanction has been accorded. Work is to be taken up shortly.
2.	Flood Protection Works on Kollidam (Coleroon) River in Thanjavur, Nagapattinam and Cuddalore Districts a) Improvement to Right Bank of Kollidam River from Grand Anicut head to Lower Anicut in Thanjavur District - LS 25.74 km to LS 108.21 km	375.90	Investment clearance has been accorded by the Union Planning Commission. Administrative sanction will be given soon.

	b) Permanent flood protection works of Right Bank of Kollidam River by Standardisation and Strengthening from Lower Anicut to infall into sea in Cuddalore District LS 108.21 km to LS 168.21 km c) Permanent flood protection works of Left Bank of Kollidam River by Standardisation and Strengthening from Lower Anicut to infall into sea in Cuddalore District LS 108.21 km to LS 168.21 km.		
	Total	**388.31**	

5.2.2. Techno - Economic clearance given to schemes by Central Water Commission but Investment clearance of Planning Commission is awaited.

Sl. No.	Name of Scheme	Estimate Amount (Rs. in crore)
1.	Flood Protection works to Vellar Basin in Cuddalore and Villupuram Districts of Tamil Nadu a) Comprehensive Flood Management works to Vellar River in Cuddalore District b) Comprehensive Flood Management works to Manimuktha Sub basin of Vellar Basin in Villupuram and Cuddalore Districts of Tamil Nadu	164.32
2.	Flood Protection to Panruti and Cuddalore Towns from Rivers Pennaiyar, Gadilam, Uppanar, Paravanar and South Malattar rivers in Cuddalore District.	68.41

3.	Flood Protection Works in Khan Sahib Drainage Channel to protect Chidambaram town of Cuddalore District.	7.50
4.	Flood Protection to Kosasthalaiyar river from Napalayam to sea mouth in Tiruvallur District.	14.50
	Total	**254.73**

5.2.3. Scheme under consideration of Central Water Commission

Sl. No.	Name of Scheme	Estimate Amount (Rs. in crore)
1.	Flood Protection works in Adyar river near NH4 (Road connecting Kathipara Junction and Poonamalee Road) near Nandambakkam bridge between LS 12200 to 12700 m in Kanchipuram District	14.12
	Total	**14.12**

The revised cost of the above mentioned 7 schemes after appraisal of Central Water Commission is Rs.657.16 crore.

5.3. JAWAHARLAL NEHRU NATIONAL URBAN RENEWAL MISSION (JNNURM)

A comprehensive Master Plan integrating the waterways and macro drainages like, Buckingham canal, Otteri Nullah, Virugambakkam – Arumbakkam drain, Cooum and Adyar river has been proposed in this scheme to avoid flooding in Chennai city. This is a Centre-State shared scheme. The total project cost is Rs.1447.91 crore. Out of this, the amount allocated for Water Resources Department is Rs.633.03 crore and for the Corporation of Chennai is Rs.814.88 crore. The main drainages such as storm water drains are proposed to be taken up by the Corporation of Chennai.

The basin-wise allocation of amount sanctioned for Water Resources Department is given below:-

1.	Northern Basin	-Rs 82.69 crore
2.	Central Basin	-Rs.83.89 crore
3.	Eastern Basin	-Rs.303.67 crore
4.	Southern Basin	-Rs.162.78 crore

	Total	-Rs.633.03 Crore

The project is proposed to be commenced in the year 2010-2011 and expected to be completed within three years.

6.0. ANTI - SEA EROSION WORKS

6.1. WORKS TAKEN UP UNDER STATE FUND

(A) To mitigate the difficulties faced by the fishermen and the general public and to prevent the sea erosion, the Government sanctioned 6 Coastal Protection works in Kanyakumari District for a value of Rs.5.26 crore.

(B) Due to very rough SIDAR swell waves which hit the North Chennai

coast during November 2007, heavy damage occurred in the Ennore Expressway. To replenish the damaged Rubble Mound Sea Wall (RMS Wall) in the affected reaches, the Government have accorded approval of Rs.0.99 crore.

The details of these works are as follows:-

Sl. No.	Name of Work	Project Cost Rs. in crore	Status
Kanyakumari District			
1.	Reformation of RMS wall at Erayumanthurai	1.81	Works are in progress
2.	Reformation Rubble Mound Seawall at Ramanthurai,	0.70	
3.	Reformation of RMS Wall at Mulloorthurai	1.18	
4.	Construction of RMS wall at the gap portion near Christu Raja kurusady at Poothurai,	0.45	

5.	Reformation of RMS wall at Thengapattinam (Aryanthoppu)	0.73	
6.	Construction of RMS wall at Kurumpanai	0.39	
North Chennai			
7.	Replenishment of the Existing damaged RMS wall along Ennore Expressway in North Chennai (L.S.16/475 km - 16/850 km)	0.99	Work is in progress.
	Total	**6.25**	

6.2. PROPOSAL ON COASTAL PROTECTION UNDER CONSIDERATION OF GOVERNMENT OF INDIA

A proposal for Rs 666.26 crore on Coastal Protection Works of Tamil Nadu was sent to Ministry of Water Resources, Government of India in July 2008. Under this scheme, 9 coastal districts (Kanyakumari, Thoothukudi, Chennai, Cuddalore, Kancheepuram, Nagapattinam, Tirunelveli, Tiruvallur and Villupuram) will

be benefitted. The State Technical Advisory Committee on Flood Control and Protection Works cleared the Coastal Protection works for an amount of Rs.666.26 crore. This proposal has also been recommended for consideration under the 13th Finance Commission grant-in-aid programme. The 13th Finance Commission has recommended a sum of Rs.200 crore to Tamil Nadu for taking up coastal protection works. The detailed Project Report will be sent shortly to the Government of India.

7.0. ARTIFICIAL RECHARGE SCHEME

Artificial Recharge Scheme aims at augmentation of the ground water potential, effective utilization of surplus water in the rivers and streams and avoiding sea water intrusion into the land.

7.1. ARTIFICIAL RECHARGE SCHEME THROUGH CHECKDAMS

MASTER PLAN AT A COST OF RS.550 CRORE

Realizing the significance of ground water, the Government during 2008 had

announced a Master Plan at an estimated cost of Rs.550 crore, to be implemented in three years through the line departments. Under this scheme, a Master Plan for Artificial Recharge to Groundwater through check dams, groundwater shafts, percolation ponds etc., is being carried out by five departments, namely Water Resources Department, Agricultural Engineering Department, Tamil Nadu Water Supply and Drainage Board, State Ground and Surface Water Resources Data Centre and Forest Department. The Water Resources Department is functioning as the nodal agency for implementation of the scheme.

During the year 2008-2009, a sum of Rs.100 crore was allotted for this scheme Rs.50 crore was for Water Resources Department for 122 works.

The details of allocation and worksare as below:-

DESCRIPTION	WATER RESOURCES DEPARTMENT	STATE GROUND AND SURFACE WATER RESOURCES DATA CENTRE
Allotted Amount	Rs. 48 crore	Rs. 2 crore
Total No. of works sanctioned	107	15
No. of works completed	99	14
No. of works in progress	2	--
No. of works to be started	1	--
No. of works to be dropped	5	1
Sanctioned Amount	Rs. 42.91 crore	Rs. 2 crore
Expenditure incurred	Rs. 38.02 crore	Rs. 1.88 crore

During the year 2009-2010, a sum of Rs.100 crore was allotted for this scheme Rs.50 crore was apportioned to Water Resources Department for 76 works.

The details of allocation are as follows:-

DESCRIPTION	WATER RESOURCES DEPARTMENT	STATE GROUND AND SURFACE WATER RESOURCES DATA CENTRE
Total No. of works sanctioned	57	19
Sanctioned Amount	Rs. 35.80 crore	Rs. 1.77 crore
No. of works proposed for sanction.	6	9

7.2. ARTIFICIAL RECHARGE OF GROUND WATER THROUGH DUG WELLS

In this scheme, it is proposed to recharge the existing dug wells with the participation of the well owners, utilizing the rainfall run-off. This scheme is sponsored by the Government of India over a period of 3 years (2008-2010) at a cost of

Rs.509 crore. The scheme covers 232 blocks categorized as over-exploited, critical and semi-critical located in 28 districts in the State (except Chennai, Ariyalur, the Nilgiris and Kanyakumari Districts).

Under this scheme, the small and marginal farmers having land upto 5 acres are provided 100% subsidy of Rs.4000/- per well. Other farmers are provided 50% subsidy of Rs. 2000/- per well. The State Level Steering Committee (SLSC) and the District Level Implementation and Monitoring Committee (DLIMC) which have been constituted to recommend / approve the schemes, have so far approved the subsidy for 353212 wells. So far, 19510 recharge structures have been constructed by the beneficiaries.

8.0. COOUM RIVER RESTORATION PROJECT

This Government has undertaken numerous measures for the beautification of Chennai city. As a part of the activities, for the restoration of Cooum river, a team of high level officers under the leadership

of the Hon'ble Deputy Chief Minister visited Singapore during the month of November 2009. In Singapore this team made field visits to the River Restoration Project carried out in Singapore and Kallang rivers and had discussions with the officials of Singapore River Restoration Projects. Based on this, the team presented a report on Cooum River Restoration Project to the Government on 3.12.2009.

Based on the advice given by the Government on this report, and based on the decision taken during the review meetings with the higher officials relating to Cooum restoration, this Government has reconstituted the "Adyar Poonga Trust" as "Chennai River Restoration Trust" on 22.1.2010 with the objective of restoring Chennai rivers which include Adyar, Buckingham Canal along with Cooum river. Subsequently, a High Level Committee has been constituted on 25.1.2010 under the Chairmanship of Hon'ble Deputy Chief Minister with Hon'ble Ministers for Slum Clearance, Environment and higher officials as its Members for evolving the projects for river restoration to

be implemented through the Trust and for monitoring the implementation and progress of the projects.

The first meeting of the High Level Committee was held on 8.2.2010. During this meeting, it was decided to execute a Memorandum of Understanding (MOU) with Singapore Co-operation Enterprises of Singapore Government for the preparation of a Comprehensive Master Plan for the restoration of Cooum river in a sub-basin framework as well as to get technical assistance and training during implementation. Accordingly, on 18.3.2010, in the presence of Hon'ble Chief Minister, the MOU was signed between Chennai Rivers Restoration Trust and Singapore Co-operation Enterprises. Based on this, the Singapore Co-operation Enterprises has agreed to furnish the proposals for the preparation of the Comprehensive Master Plan for Cooum River Restoration.

As a first step for the restoration of Cooum river, it has been decided to take up the eviction of the backyard industries situated

along Cooum river banks in Chithathiripet, Pudupet area and resettling them in a new Auto Nagar complex to be developed in Appur village near Singaperumal koil. This work is in progress. Further, it has been decided to enumerate all the encroachers along the Cooum river banks within two months. This Government has also decided to evict all the encroachers along Cooum river after providing them with alternative housing. Accordingly about 1150 encroachers in Cooum river banks along Langs Garden area in Pudupet were evicted during December 2009 after providing with alternative housing. Similarly, the encroachers along the alignment of Chennai – Maduravoyal connectivity are also being evicted by providing them alternative housing. To avoid further encroachments and also to avoid dumping of garbage and debris in the evicted areas, these areas are being handed over by Water Resources Department to the Corporation of Chennai for development of parks with the intention of better public utility and environmental aesthetics. So far, the site along Cooum banks in Langs Garden area near Pudupet for about 1 KM length was handed over to Corporation of Chennai on 8.12.2009 after

the eviction of encroachers and a park with walkway etc., is being developed at a cost of Rs.1.27 crore. Similarly, the site along Cooum banks in Sivanananda Salai between Anna Salai and Kamarajar Salai for about 1100 metre length and 5 metre width was handed over to Corporation of Chennai on 1.2.2010 for the development of park which is nearing completion.

Moreover, Detailed Project Reports for the agricultural infrastructures development works in the rural areas of Cooum and Adyar sub-basins are prepared under the IAMWARM Project and are being sent to World Bank for concurrence.

In addition to this, an Action Plan for arresting sewage in falls of about 127 Nos. into Cooum river within a time frame of 2 years has been chalked out and is under implementation.

9.0. KRISHNA WATER SUPPLY PROJECT

As per the agreement with the Government of Andhra Pradesh, a total Quantity of 12 TMC of water per year is to be realised at the Tamil Nadu border in

this project. A quantity of 46.022 TMC of water has been received since its inception of 1996. During the last year, a quantity of 4.145 TMC has been realised from 15.09.2009 to 20.12.2009. Again, water was released from the Kandaleru Reservoir from 30.01.2010. For 02.02.2010 to 03.04.2010, a quantity of 2.871 TMC of water has reached Tamil Nadu. Thus, a total quantity of 7.016 TMC has been realized during the year 2009-2010.

10.0. PARTICIPATORY IRRIGATION MANAGEMENT (PIM)

The Government of Tamil Nadu is advocating the participatory irrigation management programme with the objective of ensuring equitable distribution and optimum utilization of water for irrigation by the farmers involving them in the operation and maintenance of irrigation systems and inculcating a sense of ownership of irrigation system in them.

PIM Act namely, "The Tamil Nadu Farmers' Management of Irrigation Systems Act, 2000 (TN Act 7/2001)" was enacted. The rules for giving effect to the

provisions of the Act have been framed in 2002 and the rules for elections have been framed in 2003.

The Act has been brought into force in 30 Districts of the State except the Nilgiris and Chennai, where there is no ayacut. Initially, the Act was implemented only in the 20 Districts where the then Water Resources Consolidation Project was implemented, with effect from 01.10.2002. Subsequently, the Act has been extended to rest of the districts also, with effect from 07.05.2007. The Act envisages for constitution of farmers' organizations in the entire command area of all irrigation systems under the management of Water Resources Department.

Farmers' organization means:-

(i) 'Water Users Association' at the primary level consisting of all the water users or
(ii) 'Distributory committee' at secondary level or
(iii) 'Project committee' at the project level

In the WRCP implemented command areas of about 6.0 lakh ha., the Managing Committees of 1566 Water Users Associations were constituted in 2004, dividing the WUA areas into 7872 Territorial Constituencies. One time additional maintenance grant of Rs.100 per ha. was given to these WUAs.

Tamil Nadu is the pioneering State in the constitution of Distributory Committees and Project Committees in the Country. In 2008, 161 Distributory Committees and 9 Project Committees were constituted in the WRCP command areas. The five year and six months of the term of their office (amended by the Tamilnadu Farmers' Management of Irrigation systems (Amendment) Act, 2009 (Act No. 1/2009) ended during June 2009. Therefore election to reconstitute the managing committees of 1566 WUAs was orgainsed in 2009. 1536 Presidents and 7315 Territorial Constituency members have been elected and assumed their offices. 157 Distributory Committees and 9 Project Committees have also been reconstituted. Fresh election to the left out

posts in the managing committees is to be organized.

In the mean time, 2361 WUAs have been delineated in the IAMWARM Project command areas dividing the WUA areas into 10790 Territorial Constituencies. 2188 Presidents and 9288 Territorial Constituency members have been elected in 2008 and 2009. Fresh election to the left out posts in the managing committees is to be organized.

Two day orientation training programme was organised by the Irrigation Management Training Institute, Trichy in 2009 and 1100 newly elected Presidents of WUAs were benefited. Similarly, two day programme is being conducted to cover about 950 newly elected Presidents of WUAs.

Under IAMWARM Project, a cluster (of about 10) of WUAs would be identified and provided with office building with network connectivity on demand-driven basis. To fulfil the training needs of the WUAs,

procurement of support organizations is under process, who would undertake the capacity building programme for the WUAs.

As an effect of the participatory irrigation management programme, there is an increase in participation of farmers in the irrigation management . Some of the success stories of PIM are:

- Development of good rapport between farmers and Water Resources Departement officers.
- Improvement of unity among farmers.
- Amicable settlement of conflicts/ disputes among farmers by the WUAs.
- Development of attitudinal changes for considering the demands of tail end farmers.
- Awareness of eviction of encroachments in the water-bodies.
- WUA has become the forum for farmers grievances on irrigation.

- Prevention of unlawful utilisation of water.
- Decline in number of cases / complaints.
- Flexibility in irrigation scheduling.

11.0. TAMILNADU PROTECTION OF TANKS AND EVICTION OF ENCROACHMENT ACT, 2007

The Act was legislated in the year 2007. Along with its rules, the Act came into force on 01.10.2007. All over the State, the general public have been enlightened on the awareness of protecting the tanks and water-bodies in good condition on the provisions of this Act and Rules. The works such as boundary delineation, eviction of encroachments and planting of poles along the tank boundaries was commenced in the year 2007-2008. Out of the 13710 tanks maintained by Water Resources Department, 2805 tanks have been fully restored. The eviction are in various stages in respect of the remaining tanks.

12.0. INTRA LINKING OF RIVERS IN STATE

12.1. LINKING OF RIVERS WITHIN THE STATE WITH FUNDING ASSISTANCE FROM GOVERNMENT OF INDIA UNDER AIBP

(A) Linking of Cauvery with Agniar, South Vellar, Pambar, Kottaikariyar, Vaigai and Gundar

The Grand Anicut is the only structure available down the Mettur Dam to store the surplus water in the Cauvery during the rainy season. To overcome the situation an administrative sanction for a sum of Rs.189 crore from State Government fund has been accorded for the upgradation of the existing Bed Regulator into a Barrage across the river Cauvery at Mayanur village in Karur District. A sum of Rs.54.26 crore has been spent so far. The works were commenced on 9.2.2009 and they are in various stages. This project is

programmed to be completed by February, 2011.

(B) Formation of a Flood Carrier Canal from Kannadian Channel to drought prone areas of Sathankulam and Thisaiyanvilai by Interlinking Thamirabarani, Karumeniyar and Nambiyar rivers in Thirunelveli and Thoothukudi Districts of Tamil Nadu

This proposal was formulated to divert the dependable portion of surplus from the Kannadian anicut channel to the drought prone areas of Sathankulam and Thisaiyanvilai upto M.L.Theri sand dunes, besides, stabilizing the water starved ayacuts of Manimuthar channel in III and IV reaches. This proposal also interlinks the tributaries of Thamirabarani river namely, Pachaiyar, Kodumudiyar, Karumeniyar and Nambiyar river basins. This proposal will benefit 23040 ha of ayacuts.

The proposal also envisages improvements to the Kannadian Anicut, widening and improving the existing Kannadian Channel for a length of 6.50 km and excavation of Flood Carrier Canal for a length of 73.0km. The Government, in anticipation of financial assistance by Accelerated Irrigated Benefit Programme (AIBP), has accorded Administrative Sanction for this scheme at a cost of Rs. 369 Crore.

This project is being implemented in 4 stages. So far, an expenditure of Rs. 24.38 crore has been incurred. This project is under consideration of Central Water Commission, Government of India under Accelerated Irrigation Benefit Programme. The Environmental Impact Assessment study has been entrusted to Anna University. On completion of the EIA study, the Clearance of Central Water Commission will be obtained. The Central Water Commission has

appraised Project cost to Rs.454.68 Crore.

(C) Excavation of link canal to interconnect Pennaiyar river with Palar river through Cheyyar river and augmenting supply to Nandan Canal in Thiruvannamalai District

This proposal envisages excavation of link canal for a length of 23.55km, taking off from Sathanur Reservoir to connect with Cheyyar River on the upstream side of the Alathur Anicut. A feeder canal for a length of 38.72km has been proposed to feed the Nandan channel.

Detailed Project Report for this scheme has been prepared for an amount of Rs.174.00 crore and sent to Government of India for seeking assistance under Accelerated Irrigation Benefit Programme (AIBP). This project is under consideration of Central Water Commission, Government of India for AIBP assistance.

13.0. INTERSTATE RIVER WATER ISSUES

13.1. Cauvery Waters Issue

The Cauvery Water Disputes Tribunal after examining all the aspects of the case and hearing the arguments putforth by the party States, finally pronounced its final decision on 05.02.2007 under section 5(2) of the Inter State River Water Disputes Act, 1956.

All the Party States and the Government of India have filed petitions in the Tribunal under section 5(3) of the Inter State River Water Disputes Act seeking clarification and explanation to the Tribunal's final order in respect of certain clauses.

In the meanwhile, the States of Karnataka and Kerala filed Special Leave Petitions in the Supreme Court against the order of the Tribunal. Tamil Nadu also filed a Special Leave Petition against certain aspects of the final order of the Tribunal. These Special Leave Petitions (Civil Appeals) are still pending in the Supreme Court.

The Tribunal on 10.07.2007, took note of the Special Leave Petitions filed by the Party States and observed that since the Supreme Court has granted special leave to appeal and the appeals are pending, the applications filed in the Tribunal under section 5(3) can be listed after the disposal of the appeals in the Supreme Court.

The final order of the Tribunal will become effective and binding on the party States only after it is published in the Official Gazette of the Government of India, after the Tribunal gives its further report on the reference petitions filed before them, and till then, the Interim order of the Tribunal will be in force.

The Government of Tamil Nadu will take all necessary steps to safeguard its rights and interests.

13.2. Mullai Periyar Dam

After completion of the emergency and medium term strengthening measures for the Main Dam, the Central Water Commission recommended on 29.04.1980 to raise the water level to 145ft. But the Government of Kerala did not agree for raising the water level from 136 ft to 145 ft., even after the main dam has been fully strengthened and it insisted that the water level should continue to be maintained at 136 ft.

In the Writ Petition filed in the Supreme Court along with the connected matters, the Supreme Court pronounced its judgement on 27.2.2006 and permitted the Tamil Nadu Government to raise the water level from 136 ft to 142 ft initially and also to carry out further strengthening measures as suggested by the Central Water Commission, to the Baby dam and Earth dam. The Supreme Court has also held that the State of Kerala and its officers are restrained from causing any obstructions for carrying out the balance strengthening works. The Supreme Court

in the same order stated that after the strengthening works are completed to the satisfaction of the Central Water Commission, independent Experts would examine the safety angle before the water level is permitted to be raised to 152 ft.

Soon after the Supreme Court pronounced its judgement, the Kerala Government passed "The Kerala Irrigation and Water Conservation (Amendment) Act 2006" on 18.03.2006 patently to avoid implementation of the Supreme Court Order and fixed the FRL of Mullai Periyar Dam as 136 ft. in that Amended Act. The Tamil Nadu Government hence filed a Civil Suit (O.S.3 of 2006) on 31.3.2006 in the Supreme Court praying to declare "The Kerala Irrigation and Water Conservation (Amendment) Act 2006" as unconstitutional in its application and effect on Mullai Periyar Dam.

As per the directions of the Supreme Court on 25.9.2006 and the decision of the all party meeting held on 23.10.2006, a meeting of the Chief Ministers of both the States in the presence of the

Hon'ble Minister for Water Resources, Government of India, was held on 29.11.2006. In continuation of that meeting, a Ministers' level meeting was held on 18.12.2006 before the Hon'ble Minister for Water Resources in New Delhi. No consensus was reached in these meetings.

Later, as suggested by the Hon'ble Prime Minister, a meeting of Hon'ble Chief Ministers of Tamil Nadu and Kerala was again held in New Delhi on 19.12.2007 before the Hon'ble Union Minister for Water Resources. No consensus was reached in this meeting also.

The three Member Special Bench which heard arguments from 21.10.2009 till 10.11.2009 viewed, among others, that since certain substantial questions of law are involved in the interpretation of the Constitution to decide the Suit on the issues framed, it would be necessary to place the matter before the Chief Justice for directions for placing before a Constitution Bench. The Constitution Bench which was later formed, heard the

case from 20.01.2010 onwards and on 18.02.2010 ordered the formation of an Empowered Committee consisting of 5 Members, including the Chairman. The Committee has been requested to analyse all the issues except legal and submit a report as far as possible within six months. The Government of Tamil Nadu has filed an I.A. on 08.03.2010 praying to give appropriate directions including the recall of its Order dated 18.02.2010 and to issue directions as to the further course of hearing in the Suit. The Government of India, Ministry of Water Resources filed two Interlocutory Applications one relating to grant of extension of time and bearing expenses of the Empowered Committee by the two State Governments besides the Government of India. The Supreme Court of India on 29.3.2010 while dismissing the Application of Tamil Nadu and the Application of Government of India for bearing the expenses of the Empowered Committee by the States also, had granted time till 30.4.2010 for the constitution of the Empowered Committee.

The Government of Tamil Nadu will effectively pursue its arguments before the

Constitution Bench to safeguard the interests of Tamil Nadu.

13.3. Parambikulam Aliyar Project - Review of Agreement

The Parambikulam Aliyar Project, a multi-valley project, was planned, designed and executed by the Government of Tamil Nadu as one of the Second Five Year Plan Projects, with the consent and co-operation of the Government of Kerala for sharing mutual benefits through the utilization of flows in the rivers of Anamalayar, Nirar, Sholayar, Parambikulam, Palar and Aliyar and the streams flowing into them, for generation of Hydro Electric Power, irrigation, drinking water supply and industrial use in both the States. An agreement therefor between the Government of Tamil Nadu and Kerala was entered into on 29.05.1970 with retrospective effect from 09.11.1958. This Agreement was due for review on 9.11.1988. Accordingly, both the Governments exchanged the documents for review on 21.09.1989 and since then held several Inter-State discussions for

continuation after review for another 30 years.

In the Minister level meeting held between Governments of Kerala and Tamil Nadu on 10.06.2002 at Chennai, a decision was taken to constitute a Technical Committee comprising of Engineers from both the States to identify the areas where amendments may be required in the Agreement and to facilitate the review at the Government level. The Technical Committee submitted its Report in May 2003. The Report was discussed in the Minister level meeting held on 10.11.2003 at Chennai and on 4th January 2004 at Thiruvananthapuram.

The Hon'ble Chief Minister of Tamil Nadu addressed the Hon'ble Chief Minister of Kerala on 29.12.2007 suggesting that further talks to review the Parambikulam Aliyar Project Agreement might be held at the level of Chief Secretaries.

The Chief Secretary level meeting, after prolonged correspondence, was held on

30.05.2008 at Thiruvananthapuram. In that meeting, it was decided to exchange more information and data pertaining to the review of the Agreement and to have another meeting at Chennai. Accordingly, the meeting at Chennai was held on 27.02.2009 and it was decided to have a meeting at the Secretary level to examine all the issues in their entity and work out a single package that can be placed before the Hon'ble Minister of the concerned States. As per this decision, meetings at Secretary level were held in Thiruvananthapuram on 08.04.2009 and on 24.04.2009 and on 25.04.2009 in Chennai. Following this, another meeting at the Chief Secretaries level is scheduled to be held shortly in Thiruvananthapuram to explore the possibility of quickly completing the first review of this Agreement.

The Government of Tamil Nadu will continue to press the Government of Kerala to complete the first review of Parambikulam Aliyar Project Agreement which is long over due.

13.4. Neyyar Left Bank Canal Irrigation Project

The Neyyar Irrigation Project both first and second stages were planned and executed by the State of Kerala. Due to the States' Reorganisation in 1956, a portion of the ayacut localized to be served by this project to an extent of 9200 acres lying in the Vilavancode taluk got transferred to Madras State (Tamil Nadu) and forms part of Kanyakumari District. The canal works required to feed this ayacut were executed by the State of Tamil Nadu at their cost with the approval of the Central Government and the Government of Kerala. The project is in operation from the year 1965. Thus, the Government of Tamil Nadu has the right over the sharing of waters from the river Neyyar.

Even though the Government of Kerala agreed on the sharing of cost etc., it did not concede to the request of Tamil Nadu for entering into an agreement on the lines suggested by Tamil Nadu, kept pending for long. In 1999, Kerala took the stand that "since Neyyar is not an inter State river, it

would not be necessary to conclude an inter State agreement regarding the sharing of waters of this river". This is the first occasion, Kerala raised the issue that Neyyar is not an inter-State river. The efforts taken by the Government of Tamil Nadu with the Government of India to convene the meeting could not materialize and the Government of India informed this Government that due to the non-cooperation from the Government of Kerala, it could not convene the meeting for resolution of the issue. It, however, suggested to continue the bilateral talks between the two Governments and the Central Water Commission will extend its help whenever required.

Upto February, 2004 the Government of Kerala was supplying water to this area of Tamil Nadu through the left bank canal of the project, even though the supply made was very much below the designed discharge of 150 cusecs. Thereafter the Government of Kerala stopped the supply of water. The Government of Kerala thus chose to disown their responsibility to extend irrigation to an area earlier included in the project by them, just because that

area got transferred to the adjacent State through the States Reorganisation Act 1956.

In 2007, the Government of Kerala stated that as per the Resolution passed in the Kerala Legislative Assembly on 18.10.2006, water will be supplied to Tamil Nadu from the Neyyar dam after realizing the value of the water so far given. Tamil Nadu has taken the stand that since Neyyar is an inter-State river, as per Section 7 of the Inter State River Water Disputes Act 1956, the question of paying "any seigniorage or additional rate or fee (by whatever name called) in respect of the use of such water by any other State or the inhabitants thereof" will not arise.

The Government of Kerala now reiterates the stand that Neyyar is not an inter State river, even though Tamil Nadu has established from the topo sheets of the Government of India that the head catchment area of about 12.90 sq. k.m. river Neyyar is within the Tamil Nadu area.

On 26th June 2008, the Government of Kerala sent a draft agreement prepared by them. As some clauses had to be changed or added, a re-cast draft was sent by the Government of Tamil Nadu to the Government of Kerala on 31st October 2008. Kerala responded in December 2008 stating that Neyyar cannot be considered as an Inter State river. Further, the Government of Kerala on 11.01.2010 has again sent a fresh draft agreement and expressed its willingness to discuss the matter. The present draft agreement is not in the best interest of the Government of Tamil Nadu.

Notwithstanding the arguments and counter-arguments in this issue, Tamil Nadu Government is genuinely interested to have the Neyyar river issue settled amicably and an agreement acceptable to both the States signed at the earliest. This Government is taking all efforts in this regard.

13.5. Pamba - Achankoil - Vaippar Link

The National Water Development Agency has formulated the Pamba - Achankoil - Vaippar Link Project, which envisages diversion of 22 TMC which is only 20 % of the surplus waters of Pamba and Achankoil rivers of Kerala to Tamil Nadu to irrigate an ayacut of 91,400 hectares in the dry taluks of Sankarankoil, Kovilpatti, Sivagiri, Srivilliputhur, Rajapalayam, Sathur and Tenkasi of Tamil Nadu and will also help to generate peak power of 500 MW for Kerala.

The Government of Tamil Nadu has given its acceptance to the proposal, whereas the Government of Kerala has passed a resolution in its Legislature to drop this proposal.

The Chief Minister of Tamil Nadu on 05.09.2006 addressed the Prime Minister with a request to prevail upon the Government of Kerala for giving its concurrence, so that the Pamba - Achankoil - Vaippar Link project, which is

beneficial to both the States, could be taken up for implementation.

The Government of Tamil Nadu has again addressed the Government of India, Ministry of Water Resources, on 25.09.2007, requesting them to treat Pamba - Achankoil - Vaippar link as a priority link under the Peninsular River linkage and also direct the NWDA to conduct a joint study with the Government of Kerala as proposed earlier, if necessary, to convince the Government of Kerala to see that there is huge surplus.

The Government of Tamil Nadu on 01.02.2010 has requested the National Water Development Agency to convene the meeting of the "Consensus Group", since the feasibility and availability of surplus in these rivers have already been established.

The Government of Tamil Nadu is actively pursuing the matter with the Government of India for implementation of this project.

13.6. Pandiyar - Punnampuzha Project

The West flowing Pandiar - Punnampuzha, an interstate river, originates in the high peaks of the Nilgiris in Tamil Nadu, flows west and finally drains into Arabian Sea.

In 1965, an understanding was reached between Tamil Nadu and Kerala permitting Government of Tamil Nadu to execute the Pandiar - Punnampuzha Hydro Electric Project utilising the west flowing waters of Pandiar and Punnampuzha rivers within Tamil Nadu in 171.38 sq. km. (66.20 Sq. miles) with an average annual yield of 14 TMC with an installed capacity of 100 MW (2x50 MW) for the first stage and 150 MW in the next stage. The Planning Commission also approved the proposal in 1968.

But, on representation from the ryots of Coimbatore district, the possibility of diverting the waters of Pandiar - Punnampuzha lying within Tamil Nadu to Moyar arm of Bhavani River for use by Tamil Nadu was investigated and this was also found feasible.

Tamil Nadu wanted diversion of at least 7 TMC of water eastward.

The Tamil Nadu Electricity Board on 29.11.2006 forwarded a modified proposal of the Pandiar - Punnampuzha Hydro Electric Project to the Kerala State Electricity Board for its concurrence. So far, there is no response from the Kerala Government.

The Government will pursue with the Government of Kerala for implementation of the Pandiar - Punnampuzha scheme.

13.7. Peninsular Rivers Link

The National Water Development Agency (NWDA) which was created in 1982 has done extensive work of feasibility studies on many of the inter-links for inter - basin water transfer proposals both in the Himalayan Rivers and also the Peninsular Rivers. It has assessed the overall surplus from Mahanadhi and Godavari as 925 TMC after allowing for all future in-basin requirements. It has proposed to utilize this surplus for various purposes like

irrigation, drinking water, industrial use etc. under the Peninsular Component. They have assessed the benefits that would acrue as about 3 Million hectares of additional irrigation and substantial additional Hydro Power besides several other intangible benefits. Under this scheme, Tamil Nadu is expected to get about 214 TMC at the border and the additional area that could benefit by irrigation is estimated as 7.90 lakh hectares.

Tamil Nadu has suggested for enhancing the quantum of water proposed to be transferred to Tamil Nadu by at least another 100 TMC and creation of storages proposed in the Project like Manibhadra on Mahanadhi and Inchampalli and Polavaram on the Godavari River to be given top priority and started ahead. Tamil Nadu also suggested an alternative alignment for the Pennar - Palar - Cauvery link, so as to spread the benefits within the State equitably to the most needed areas, which has been accepted in principle by the National Water Development Agency.

The Hon'ble Chief Minister of Tamil Nadu in the 52nd Meeting of the National Development Council held at New Delhi on 09.12.2006, and in the discussion with the Vice - Chairman, Planning Commission in New Delhi on 05.02.2007, has emphasized the urgency to start the linking of the Peninsular Rivers in order to augment the water resources, so as to re-vitalize the agricultural sector by providing funds for the interlinking of rivers project during the XI Five Year Plan starting from the year 2007- 2008.

The Government of Tamil Nadu has also requested the Ministry of Water Resources, Government of India, in its letter dated 28.02.2007, to take up the issue with the Union Planning Commission for provision of adequate funds in the XI Five Year Plan itself for implementing the Scheme.

Tamil Nadu has suggested to the Government of India that the Parliament can make a law, by virtue of the powers conferred under the Article 248(1) read

with Entry 97 of List 1 (Union List) of the Seventh Schedule of the Constitution, for implementing the interlinking of major rivers in the Country, so as to facilitate early execution of Interlinking of Rivers Project (ILR).

Tamil Nadu continues to take all efforts to get the Peninsular Rivers Link Project implemented early.

13.8. Palar

The Government of Tamil Nadu filed the Original Suit No. 2/2006 on 10.02.2006 in the Supreme Court to restrain the Government of Andhra Pradesh from constructing a reservoir across Palar at Ganeshapuram, Kuppam Taluk, Chitoor district, Andhra Pradesh.

The Government of Tamil Nadu as early as in the year 2007 requested the Government of Andhra Pradesh to drop the proposal as it will affect the life line of the people of Tamil Nadu depending on Palar waters. In the meantime, the

Supreme Court in its order dated 07.01.2008 made it clear that the Government of India may convene a meeting between the two States to settle the dispute.

Following this, a meeting at official level was held by the Chairman, Central Water Commission in New Delhi on 11.03.2008. After deliberations, the Central Water Commission requested Andhra Pradesh not to go ahead with the construction of project before the issue is settled. The settlement of this issue is pursued by the Central Water Commission / Government of India, Ministry of Water Resources.

At the initiative taken by the Hon'ble Chief Minister, the Government of India, Ministry of Environment and Forests has now deferred the proposal of Government of Andhra Pradesh for diversion of large forest lands for this project, as it is now sub judice before the Supreme Court.

The Supreme Court on 29.01.2010, has framed 7 issues for deciding the Suit filed by the Government of Tamil Nadu.

The Government of Tamil Nadu is actively pursuing on this issue to safeguard its interests.

14.0. STATE GROUND AND SURFACE WATER RESOURCES DATA CENTRE

14.1. This Centre is primarily engaged in monitoring the potential and quality of ground and surface water. In addition, the following activities are undertaken by the centre.

(a) Periodical assessment of the available ground water potential based on the data collected.
(b) Providing consultancy support to various users of ground water, on location and development of the ground water resources.
(c) Dissemination of the data generated to the organizations and public based on their needs.

14.2. HYDROLOGY PROJECT – II (HP – II)

This is a project assisted by the World Bank at a total cost of Rs.25.47 crore for a

period of six years (2006-2012). The two main components of this project are:

(a) Institutional Strengthening
(b) Vertical Extension of HP – I

(a) Institutional Strengthening

Under this component, the activities initiated in the HP-I (taken up with the World Bank assistance during the period 1995-2003), are consolidated through training to the staff and by upgrading the I.T. equipments and software. In addition, data dissemination management and monitoring support and logistical support are taken up under this component.

(b) Vertical Extension of HP – I

Under this component, the task of development of Hydrological Design Aids (HDA) for ground and surface water including water quality in all the river basins of the State has been taken up. This would result in correct calculation of design flood and yield from the basins and

ensure economical designs of irrigation structures. Further, an integrated planning tool using GIS (Geographical Information System) is being developed to implement effective management of the water resources. It is also proposed to take up Purpose Driven Studies (PDS) to address site- specific hydrological problems in a basin.

15.0. INSTITUTE FOR WATER STUDIES

15.1. This institute was established in the year 1974 to assist the department in planning, assessing and managing the water resources, by taking up necessary studies. The institute has a pool of talent from the field of engineering, hydro geology, geo physics, geo chemistry, environment, photo-geology, remote sensing and agro economics. The on-going activities of this institute are detailed below:

MICRO LEVEL STUDIES

Out of the 17 river basins in the State, micro level studies have been completed

in 16 river basins except Cauvery basin. At present, the re-appraisal study of the Kodaiyar basin is in progress.

15.3. REMOTE SENSING AND GIS

Thematic maps on land use, lineaments and ground water potential are being prepared. These maps are found to be of extensive use in the on-going IAMWARM Project and will be of use to the proposed Cauvery modernization Project for Delta Zone.

15.4. STUDIES TAKEN UP

15.4.1. STUDIES FUNDED BY THE STATE LAND USE BOARD OF THE STATE PLANNING COMMISSION

(a) Identification of favourable potential zones in over–exploited block of Thalaivasal in Salem district using Remote sensing and GIS techniques. This study has been completed. 13 villages have been identified for further development of ground water. Construction of

checkdams and percolation ponds have been recommended.

(b) Evaluation of ground water potential zone using high resolution cartosat data in Nandhiyar sub-basin of Chennai basin. This study is in progress.

15.4.2. WATER RESOURCES RESEARCH FUND (WRRF) STUDIES

WRRF was created under the World Bank assisted Water Resources Consolidation Project (WRCP). So far, 38 research studies have been completed and the following two studies are in progress.

(a) **Estimation of transmission loss in Sathanur system.**

This study has been entrusted to Anna University.

(b) **Flood as hazard, disaster proneness, vulnerability in North Chennai.**

This study has been entrusted to University of Madras.

15.5. RIVER BASIN MANAGEMENT BOARDS

River Basin Management Boards have been established for Palar and Tamiraparani basins. The Technical Secretariat for these Boards is functioning in this institute.

16.0. IRRIGATION MANAGEMENT TRAINING INSTITUTE (IMTI)

16.1. The Irrigation Management Training Institute was established in the year 1984 to impart training to all those involved in irrigated agriculture. Training Programmes on Participatory Irrigation Management (PIM), Computer applications in Irrigation Management, Geographical Information System (GIS), Remote sensing, AUTOCAD and human resources development are conducted by the Institute. In addition, farmers are exposed to modern irrigation techniques and action research programmes are encouraged.

16.2. Modern irrigation management techniques covered are irrigation scheduling, on-farm water budgeting, flow measurement, Operation and Maintenance of irrigation systems, flood and drought management, crop water requirement and operation plan, etc., Efficient agricultural practices such as System of Rice Intensification (SRI), Precision Farming and Organic Farming and Integrated water resources Planning and management are also covered in the training programmes.

16.3. Study tours to other States such as Andhra Pradesh, Gujarat, Maharashtra, Madhya Pradesh and Orissa are also organised for the officers and farmers to gain first hand knowledge of the systems and practices that are adopted. Special training programmes based on the needs of organisations such as Water Resources Department, Agricultural Engineering Department, District Rural Development Agency, State Planning Commission and Horticulture Department are also conducted. Under the World Bank assisted IAMWARM project, special training programmes are conducted. Training to the Presidents of the Water Users' Associations are also conducted.

16.3. During the year 2009-2010, 128 training programmes and 48 courses were conducted. In the year 2010-2011, it is programmed to conduct 160 training programmes covering 3000 officials and 1000 farmers.

17.0. DIRECTORATE OF BOILERS

17.1. The Directorate of Boilers is the enforcing authority of the Indian Boilers (Amendment) Act, 2007, a Central Act administered by the State. Safe operation of boilers ensuring safety of the public is enforced by this Directorate. In addition, this Directorate plays a vital role in the development of boilers and their ancillary industries in the State, such as foundries, forge shops, tubes and pipes manufacturing units, etc., The provisions of the Tamil Nadu Boilers Attendants' Rules, 1964 and Tamil Nadu Boilers Operation Engineers' Rules, 1965 are enforced by this Directorate.

17.2. This Directorate conducts Tamil Nadu Boiler Attendants Examination for I–class, II-class and III-class certificate of

competency and the Tamil Nadu Boiler Operation Engineers' Examination and awards certificate of proficiency. Further, tests are conducted for high pressure welders, working in boiler related companies and certificate of competency is awarded.

17.3. This Directorate is responsible for detecting and curbing the operations of the un-registered and un-certified boilers in the State. It is also ensured that the boilers and their components are designed and manufactured as per the provisions of the Indian Boiler Regulations, 1950 by approving the design, inspecting the units at various stages of manufacturing and certifying the quality.

18.0. SAND QUARRY

18.1. The sale of sand was in private hands and the sand quarry was under the control of District Collectors and various Departments like Geology and Mining, Revenue and Public Works before October 2003. But the quarrying in the river systems exceeds the permissible limit, the Madras High Court after hearing a public interest litigation petition, directed the

State Government to constitute a 6 member High Level Committee of experts consisting of Geologists, Environmentalists and Scientists to study the rivers and river beds in the State with reference to the impact of sand quarrying. Based on the Committee's report, orders were issued amending the Tamil Nadu Minor Minerals concession Rules, 1959 by introducing a new rule 38-A whereby all existing leases for quarrying sand in Government land and permissions / leases granted in ryotwari lands have ceased to exist with effect from 02.10.2003 and also entrusting the sand quarry to the Government through Public Works Department. Accordingly, the Water Resources Department started operating sand quarries in a scientific and systematic manner.

18.2. In October 2003, sand was sold at the rate of Rs.1000/- per lorry load (2 units). Later, from June 2004, the selling price of sand was reduced from Rs.1000/- to Rs.600/- per lorry load, due to representations from the public. From 01.06.2008 onwards, Government have enhanced the lorry load from 2 units to

3 units and the amount has been fixed as Rs.900/- by adopting Rs.300/- per unit.

18.3. At present, sand is being quarried and sold directly from about 130 quarries. The revenue generated through the sand quarries during 2009-2010 is Rs.142.49 crore. From October, 2003 to March, 2010, it is Rs. 840.37 crore.

M.KARUNANIDHI
Chief Minister

IRRIGATION
PUBLIC WORKS DEPARTMENT

DEMAND NO. 40

POLICY NOTE

2010-2011

KALAIGNAR M. KARUNANIDHI
HON'BLE CHIEF MINISTER