Public Works Department

Irrigation

Policy Note for the year 2008-2009

Contents

PREAMBLE

The Public Works Department has turned 150 **years**. The Department which was established in the year 1858 with just -

- 1 Chief Engineer
- 20 District Engineers
- 3 Inspecting Engineers
- 78 Executive and Assistant Engineers
- 204 Upper Subordinates and
- 714 Lower Subordinates

has grown manifold and now functions with a strong network of

- 1 Engineer-in-Chief,
- 10 Chief Engineers,
- 59 Superintending Engineers,
- 212 Executive Engineers,
- 816 Assistant Executive Engineers,
- 2366 Assistant / Junior Engineers,
- 1305 Technical Personnel and
- 14670 Administrative Officers and staff Members
- totaling 19439 employees

The Public Works Department is not only 150 years, but has also earned reputation for its excellent service to the people and the State. The then Chennai Presidency had its territorial control spread over today's Tamil Nadu, parts of Andhra Pradesh, and the Kerala State excluding the then Travancore and Kochi Princely parts.

- The anicuts and the dams constructed;
- The irrigation canals excavated and
- The splendid buildings constructed

are the testimony to the remarkable achievement of the Public Works Department during that time.

The Hon'ble Members of this august House are aware that consequent to the formation of States on linguistic basis, the Public Works Department in Tamil Nadu continues to provide various services like harnessing water resources potential, extending irrigation potential and constructing buildings which are all capital assets of the State.

1.0. WATER RESOURCES DEPARTMENT (WRD)

1.1. General

In order to provide adequate attention to water resources management, the Government has decided that the “Water Resources Organisation” in Public Works Department will henceforth function as an independent “Water Resources Department”.

The spread and functioning of the Water Resources Department are based on the frame work of river basins. In tune with this concept, the State has been divided into four regions, headed by Regional Chief Engineers, located at Chennai, Thiruchirappalli, Madurai and Coimbatore. The specialized functions necessary for the overall planning of Irrigation projects are handled by five functional Chief Engineers heading the independent divisions of Plan Formulation (PF); Design, Research & Construction Support (DR&CS); Operation & Maintenance (O&M); State Ground & Surface Water Resources Data Centre (SG&SWRDC) and Institute for Water Studies (IWS) with headquarters at Chennai. The Engineer-in-Chief, Water Resources Department monitors and co-ordinates the functions of all these nine Chief Engineers and assists the Government as the technical and administrative head of the department.

1.2. Irrigation Infrastructure

The irrigation system of the State comprises 34 basins grouped into 17 major river basins. Water is a limiting factor in the State affecting production and productivity. Tamil Nadu covers 4% geographical area and caters to 7% population of the country whereas the available water resources is only 3%. Even though the annual average rainfall is in the order of 925 mm there are a few rain shadow regions receiving around 400 mm rainfall making them drought prone. The occasional flash floods also cause huge damages like those occurred during 2005. The surface water potential is about 853 TMC, which includes 261 TMC contributed by neighbouring States and the ground water potential estimated is about 815 TMC. The demand for water is continuously on the rise with the growth of population, industry and agriculture while there is no increase in the availability of water. Surface water resources have almost been fully harnessed by impounding the available water in 64 large dams, 11 small dams and
39,202 tanks (PWD Tanks 10,540 and Panchayat Tanks 28,662) and other water bodies.

1.3. Ground Water Potential

Ground water has become a valuable resource for meeting the drinking water requirements and for agricultural development. Tamil Nadu having almost fully utilized the surface water resource has now turned heavily to the other

alternative source of ground water for further development. Though ground water is a replenishable natural resource, its occurrence and movement is controlled by the hydro metrological and hydro geological environs which are not uniform in Tamil Nadu. Therefore, special thrust is accorded for safeguarding, recharging and judiciously using ground water. 85% of the total ground water potential of the State has been developed for use. The serious concern is that out of the total 385 blocks, 142 are over exploited, 33 are Critical, 57 are Semi-Critical, and 8 are saline. Only 145 blocks are considered to be safe. The objective is to ensure through continuous monitoring that the resource does not go beyond replenishable limits.

1.4. Irrigation Status

The gross area irrigated rose from 21.89 lakh ha. in 1950-1951 to 36.34 lakh ha. in 1998-1999. This stood at 33.09 lakh ha. in 2006-2007. In order to create and sustain irrigation potential in the water stressed State, the rational use of surface water, cautious exploitation of ground water, strengthening natural aquifers through various water harvesting and recharging means have to be effectively adopted and enforced. The river basin based model for planning of water use needs should be developed into a comprehensive strategy, State-wide, within a suitable administrative and regulatory frame work.

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

The World Bank assisted Tamil Nadu Irrigated Agriculture Modernisation and Water Bodies Restoration and Management project (IAMWARM) was approved by the Government with an outlay of Rs.2, 547 crore, over a period of six years from 2007.

2.1. Objective of the Project

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

2.2. Specific components of the project

2.2.1. Irrigation systems modernisation in a sub-basin framework: This component seeks 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 builds on the improved bulk water delivery to increase the productivity of agriculture-related activities through improved agricultural intensification and diversification of crops, micro irrigation, Animal Husbandry & 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 Association would be utilized to implement Participatory Irrigation Management (PIM) by involving farmers.

2.2.4. Water Resources Management: The institutional arrangements and capacity for sustainable water resources management is proposed to be improved by the Water Resources Department through the creation of a State Water Resources Management Authority (SWaRMA). Apart from this, topical water research would be taken up through Water Resources Research Fund (WRRF).

2.3. Project Implementation (2007-2008)

The project covers an area of 6.17 lakh ha. spread over 63 sub-basins out of the 127 sub-basins in the State. In the first year i.e., in 2007-2008, implementation was initiated in 9 sub-basins covering an extent of 2.94 lakh ha. at a cost of Rs.714.94 crore in respect of all departments put together. In the first year itself, works have been successfully initiated by all the Departments.

2.3.1. Water Resources Department: In respect of Water Resources Department, for the 9 Sub basins of the first year, necessary bids have been finalised for 58 packages with a bid value of Rs.344.64 crore. Works have been commenced in 39 packages and rehabilitation initiated in Canals, Tanks, and Supply channels etc. Under Participatory Irrigation Management, preliminary work has been completed and election is planned for nearly 1250 Water Users Associations in 2008-2009.

2.3.2. Agriculture Department: Crop Demonstrations for paddy, pulses, maize, groundnut etc were conducted in 13,795 ha. Significant improvement of 20 to 40 percentage in the yield was achieved in Maize and Rice. An impact area of 1,21,177 ha. has been identified. Critical inputs were distributed for 44,009 ha. along with 2,075 farm implements like sprayers, weeders etc.

Exceptional yields were recorded in Hybrid Maize Demonstrations i.e.

- Arjunanadhi Sub basin, Athikulam Village – 8,750 Kg per ha. as compared to
  4986 Kg per ha. in the previous year.

- Palar Sub basin, Pothipalayam Village– 13,150 Kg per ha. as compared to 5,210 Kg per ha. in the previous year

2.3.3. Horticulture Department: Both by way of Diversification and Transfer of Technology, an additional area of 4,310 ha. has been brought under fruits, vegetables and other horticultural crops.

2.3.4. Tamil Nadu Agricultural University: The new System of Rice Intensification (SRI) demonstration was introduced in an area of 1,248 ha. with an impact area of 2,595 ha. It has been planned to take up demonstrations in another 1660 ha. during 2008-09. With the SRI technique, rice yields have shown 40 to 80 percentage improvement over the conventional practice. In some areas, exceptional yields have been achieved.

- Manimuthar Sub basin, Mahibalanpatti Village – 8,750 Kg per ha. as compared to 4,750 Kg per ha. in the previous year.

- Upper Vellar Sub basin, Thumbal Village – 9,750 Kg per ha. as compared to 6,560 Kg per ha. in the previous year.

2.3.5. Agricultural Marketing: To assist the farmers to get better price, 250 Commodity Groups for diversified crops like Chillies, Maize, Groundnut, Banana etc, have been formed. Eleven Interface Workshops involving farmers and traders have been conducted. Besides, 7 Memorandum of Understandings (MoUs) between farmers and companies for different commercial crops like maize, mango, chillies etc., have been facilitated.

2.3.6. Animal Husbandry Department: To increase the conception rate, 578 Infertility-cum-total Veterinary Health care camps were conducted. To improve milk yield, the availability of green fodder was increased and an additional area of 697 ha. was brought under fodder cultivation.

2.3.7. Fisheries Department: The Department has promoted Aquaculture in 36 farm ponds by farmers as additional income generating activities. Carp seed rearing in 20 units of net cages has also been promoted.

2.4. Project Implementation (2008-2009)

During the financial year 2008-2009, 16 more Sub basins with an ayacut of about 80,000 ha. are proposed to be taken up. The proposed outlay in this year for the 25 Sub Basins is Rs.585 crore for all the departments put together.

2.4.1. Water Resources Department: In these Sub basins, Water Resources Department is proposing to take up rehabilitation works in 1,102 Tanks, 186 Anicuts and 554 k.m. of Supply Channel. Special Sub basin plans based on consultation with the stakeholders have been prepared for all the 16 new sub basins.

2.4.2. Agriculture Department: Crop Demonstrations for paddy, pulses, maize, groundnut and ragi are proposed in 4,558 ha. with an impact area of 39,097 ha.

2.4.3. Horticulture Department: Both by way of Diversification and Transfer of Technology, an additional area of 6,375 ha. has been proposed under fruits, vegetables and other crops. It is expected that the Agricultural Engineering Department will cover an area of 11,500 ha. including the horticulture area with Micro Irrigation.

2.4.4. Tamil Nadu Agricultural University: It has been programmed to take up demonstration in 1,660 ha. of System Rice Intensification (SRI) in 16 Sub basins. Rice fallow pulses are proposed in these areas as a special drive for increasing pulse production. Crops like Sunflower and Thornless bamboo are being introduced on a mission mode.

2.4.5. Agricultural Marketing: It is proposed to construct 8 Agri. Business Centres,
15 Collection Centres, 19 Drying yards and 7 Storage Godowns. Along with

this, software activities like formation of Commodity Groups, Exposure visits and trainings are proposed to be taken up.

2.4.6. Animal Husbandry Department: It is proposed to establish 15 Cluster Sub basin Veterinary Units in the gap area to improve production potentialities of livestock. To increase the availability of green fodder, an additional area of 580 ha. is proposed to be brought under fodder cultivation. To improve the productivity in small ruminants, the practice of de-worming is being introduced.

2.4.7. Fisheries Department: Aquaculture will be promoted in 250 farm ponds. Ornamental fish culture units will be promoted to generate income and rural employment. Model fish Kiosks (six) will be established to get better price for inland fish. Further, fishing implements will be provided for more efficient inland fish capture.

2.5. Project Implementation (2009-2010)

During 2009-2010, the last batch of 38 sub basins covering an extent of 2.28 lakh ha. is proposed to be taken up. Thus, all the works in the 63 sub-basins under the IAMWARM project should have been initiated by 2009-2010.

3.0. DAM REHABILITATION AND IMPROVEMENT PROJECT (DRIP)

There is a constant need to strengthen and maintain the dams in view of certain general factors like ageing, maintenance and sometimes low compliance with Dam safety standards and practices. Due attention should be shown to all the Dams irrespective of their size, as even the small Dams with considerable water storage capacity if not maintained well will have the potential to cause damage to people's livelihood and environment. It is, therefore, important to ensure that Dam structures and systems are properly maintained and are backed by regular monitoring, rehabilitation and modernization.

The Dam Rehabilitation and Improvement Project, therefore, proposes to introduce a holistic approach to Dam safety, rehabilitation and modernization. The project also includes provision of general infrastructure like training facilities, parks, better environment etc, at a few Dam sites. This project is expected to be funded by the Government of India with the assistance of World Bank.

The Tamil Nadu Government, in the first instance, approached the Government of India for rehabilitation and improvement of 22 Dams at a cost of Rs. 94.22 crore. In the meanwhile, as per discussions held with the representatives of World Bank Mission in February 2008, the number of Dams is likely to be increased and similarly the scope amplified. Based on this, a revised project proposal is being prepared. As per the indications given by the Government of India, the project may commence during 2009-2010.

4.0. HYDROLOGY PROJECT-II

The Hydrology Project-II (HP-II) is a vertical extension of the Hydrology Project-I (HP-I), which was earlier implemented during 1995-2003. The implementation of Hydrology Project-II at a cost of Rs.25.27 crore commenced in Tamil Nadu on 05.04.2006 with the funding assistance of World Bank through the Ministry of Water Resources. Under this project, the Decision Support System (DSS) will be developed with Hydrological Information System comprising reliable Hydrological and Hydro-Meteorological data to optimize the use of available groundwater potential and water resources among all the sectors like irrigation, drinking and industrial use.

As a pilot study three different applications of water resources planning using Integrated Water Resources Management (IWRM) concept will be taken up and these are:

- Drought Monitoring assessment and Management in Vaippar Basin in Virudhunagar and Thoothukudi districts.

- Flood Management in Tambirabarani Basin in Tirunelveli and Thoothukudi districts.

- ❖ Conjunctive use of Surface and ground water in Agniyar Basin in Pudukottai district.

For now, the consolidation of Hydrology Project-I activities like strengthening of monitoring Network and the Awareness Raising Activities is in progress.

5.0. CAUVERY-MODERNISATION PROJECT

The gross extent of irrigation in the Cauvery basin is 28 lakh acres and a major part of the area is under paddy cultivation. The irrigation systems in the Cauvery basin like the Cauvery Delta System, the Lower Coleroon Anicut System, Salem Trichy channels, Bhavani and Amaravathi channels are all in existence from time immemorial. Besides these ancient irrigation systems, the Cauvery Mettur Project came into existence in 1934 with the construction of Mettur reservoir and the major projects of Lower Bhavani and Amaravathi reservoirs came during the 1st and 2nd Five Year Plans.

The major irrigation systems like Cauvery Delta, Lower Coleroon etc., need extensive rehabilitation of the infrastructures and modernization of existing irrigation structures. The Cauvery Delta is a natural formation and the river Cauvery branches off to 36 rivers spreading and irrigating over 10 lakh acres. Since these are natural rivers and meant to carry drainages also, modernization of this Delta has been long over due and attempts to undertake this with the help of external funding could not materialize in the past as Karnataka opposed to this on the plea that the water dispute was pending, even though the proposals were technically found acceptable to the Government of India. None of the rehabilitation works in the Cauvery basin could be taken up either in the WRCP or in the IAMWARM Projects for the same reason.

Now that the Cauvery Dispute has reached the final stage, the Government thought it fit to initiate steps to get the Cauvery basin irrigation improvements carried out. For this purpose, the Government has constituted a Task Force to undertake a study and submit its report, so that the same can be examined and posed for external funding. The Task Force is expected to submit its report before July 2008.

6.0. IRRIGATION SCHEMES

6.1. Long Pending Schemes – Thrust on completion

A few schemes sanctioned in the early 90's and thereafter could not be completed for a long time owing to one reason or the other. In order to speed up the completion of the projects, a special thrust was given by the Government in the past two years to complete the works by providing all requisite resources and through better strategies.

Of the 18 long pending schemes, 7 schemes have been completed during the year 2007-2008; 9 Schemes are expected to be completed during 2008-2009; the remaining 2 schemes viz. Bathalapalli reservoir, and Improvements to New Veeranam Project are programmed to be completed during 2009-2010.

Sl. No	**Name of the Scheme**	**Project cost** (Rs. in crore)	**Year of sanction**	**Ayacut Benefited** (in ha.)	**Present status**
1	Nanganjiar Reservoir in Dindigul district.	41.67	1990	2554	Completed during 2007-08
2	Shenbagathope Reservoir in Thiruvannamalai district.	34.00	1996	2709	
3	Reservoir across Andiappanur Odai in Vellore district.	27.38	1996	810	
4	Reservoir across Varattar river in Dharmapuri district.	35.95	1997	1157	
5	Tank across Nayodai in Dindigul district.	7.20	1998	148	
6	Reservoir across Nallathangal Odai in Erode district.	42.70	1998	1920	
7	Tank across Ramakkal Odai and Anaivilundan Odai in Dindigul district.	5.65	1998	107	

Sl. No	Name of the Scheme	Project cost (Rs.in crore)	Year of sanction	Ayacut Benefited (in ha.)	Present status	Programme for completion
8	Irukkankudi Reservoir in Virudhunagar district across Vaippar River.	74.00	1992	4214	94% completed	June 2008
9	New Veeranam Project in Cuddalore district.	130.00	1993	--	Works to the tune of 81.91 crore completed	June 2009
10	Anicut across Malattar river in Ramanathapuram district.	42.00	1994	1914	65% completed	June 2008
11	Irrigation Facilities to 58 Villages in Usilampatti Taluk in Madurai district.	74.60	1996	925	78% completed	Sep 2008
12	Kuppanatham Reservoir in Tiruvannamalai district.	43.50	1996	3108	87% completed	June 2008
13	Bathalapalli Reservoir across Malattar in Vellore district.	29.55	1997	1125	10% completed	June 2009
14	Tank across Sirumalaiyar in Dindigul district.	8.87	1998	128	75% completed	Sep 2008
15	18th Canal in Uthamapalayam Taluk in Theni district.	28.60	1999	534	72% completed	June 2008
16	Reservoir across Mambazhathuraiyar in Kanyakumari district.	14.80	1999	339	10% completed	Oct 2008
17	Tank across Mathalapallam River in	14.15	2001	445	80% completed	June 2008

	Dharmapuri district.					
18	Excavation of supply channels from Badathalav tank to feed Vennampalli tank in Krishnagiri district.	13.50	2001	1149	85% completed	May 2008

6.2. State funded schemes

6.2.1. Rehabilitation of tanks identified by MLAs

As announced on the floor of the Assembly during the Public Works Grant 2007-2008, the Government sanctioned rehabilitation of 365 Non-System Public Works Department tanks at an estimated cost of Rs.34.81 crore. All these tanks have been identified by the MLAs in 190 rural Assembly Constituencies. Even though, as per the original proposal the rehabilitation of tanks was to be taken up with NABARD assistance, the Government has since sanctioned the required amount for taking up the works immediately in anticipation of funding approval by NABARD. Some of these works have just commenced and major part will be implemented in 2008-2009.

6.2.2. Other schemes

Schemes sanctioned in the later part of 2007-08 at a project cost of Rs.10.03 crore, will commence soon. These schemes are:

Sl. No.	**Name of Scheme**	**Project Cost** (Rs. in crore)
1.	Improvement works in canal and tank of Mordhana Reservoir system of Rajathoppu Kanar Reservoir in Vellore district.	3.34
2.	Construction of flood protective wall at the confluence point of Gadana with Tamiraparani river near Thirupudai Marudhur in Ambasamudram taluk of Tirunelveli district.	0.49
3.	Reconstruction of bridge at mile 26/5/420 of Lower Bhavani main canal in Kurumandur village in Gobi taluk of Erode district.	0.60

4.	Construction of vented causeway across Ponnai river in Melpadi village of Katpadi taluk of Vellore district.	1.50
5.	Renovation and Rehabilitation of Velachery tank.	1.10
6.	Renovation and Rehabilitation of Pallavaram tank.	1.50
7.	Repairs to Puthen Dam in Kanyakumari district.	1.50

6.3. NABARD assisted schemes

All the schemes and Minor Irrigation tank works taken up with the assistance of Rural Infrastructure Development Fund (RIDF) of NABARD upto RIDF VIII have since been completed during the year 2007-2008. The Schemes and tank works under RIDF IX, X, XI, XII and XIII are at various stages of execution as detailed below:

6.3.1. RIDF IX

	Schemes	Tanks
• Total Number of works :	23	157
• Total Project Cost (Rs. in crore) :	163.98	48.43
• Number of works completed :	17	153
• Works in progress :	6	2
• Works dropped :	Nil	2

Schemes completed

Sl. No.	Name of Scheme	Project Cost (Rs. in crore)
1	In Thanjavur district a) Rehabilitation of Cauvery regulator at mile 17/2 at G.A.Head. b) Rehabilitation of Vennar regulator across Cauvery at mile17/2 at G.A.Head. c) Rehabilitation of G.A canal	17.39

	regulator across Cauvery at mile 17/2 at G.A.Head. d) Rehabilitation of Cauvery regulator across Cauvery at mile 26/6 at Tirukattupalli. e) Rehabilitation of Kudamurity regulator across Cauvery at mile 26/6 at Tirukattupalli.	
2	Reservoir across Vandal odai in Tirunelveli district.	6.14
3	Reconsturction of Regulator No.2 across Pasimuthan Odai in Cuddalore district.	2.65
4	Anicut across Kosasthaliar river in Thiruvallur district.	2.53
5	Channel near Pothiampallam village in Dharmapuri district.	0.86
6	Channel near Kappalvadi village in Dharmapuri district.	0.85
7	New tank near Chinnur village in Thoothukudi district.	0.71
8	Channel across Ayyanarkulampatti village in Thoothukudi district.	0.67
9	Dyke across Ongur in Kanchipuram district.	0.66
10	Anicut near Vetrialankulam village in Sivagangai district.	0.50
11	Anicut across Sarugani river near Sekkadi village in Sivagangai district.	0.48
12	New tank near Rajapathy village in Tirunelveli district.	0.47
13	Construction of Bed dam near Sendanadu in Villupuram district.	0.40
14	Anicut across Sarugani river near Vallendral village in Ramanathapuram district.	0.40
15	New tank near Thuraiyur village in Thoothukudi district.	0.29
16	Anicut near Agamalai Varattar village in Theni district.	0.22
17	Anicut at Thalavaram Poondi in Kancheepuram district.	0.56

Schemes in progress

S. No	Name of the Scheme	Project cost (Rs. in crore)	Year of sanction	Present status	Programme for completion
1	Anicut across Malattar river in Ramanathapuram district.	42.00	1994	65% completed	06/ 2008
2	Kuppanatham Reservoir across Cheyyar River in Tiruvannamalai district.	43.50	1996	87% completed	06/ 2008
3	18th Canal in Uthamapalayam taluk in Theni district.	28.60	1999	72% completed	06/ 2008
4	Increasing the carrying capacity of Marudur Melakkal from Marudhur Anicut to Kalvoi Tank in Thoothukudi district.	9.53	2004	65% completed	06/ 2008
5	Modernisation of Tirukkurunkudi Periakulam in Tirunelveli district.	1.03	2004	50% completed	04/ 2008
6	New tank across Ayyanarkoil Odai in Madurai district.	3.54	2004	63% completed	06/ 2008

6.3.2. RIDF X

	Schemes	Tanks
• Total Number of works :	35	250
• Total Project Cost (Rs. in crore) :	93.58	68.02
• Works completed :	25	187

- Works in progress : 7 61
- Works proposed under State funding : 3 2 (excepting Tank works)

Schemes completed

Sl. No.	Name of Scheme	Project cost (Rs. in crore)
1	Restoration works in anicuts, channels and sluices in the Old Aliyar system in the Kariapatti anicut & channel of Parambikulam Aliyar Project in Coimbatore district.	2.11
2	Restoration works in anicuts, channels and sluices in the Old Aliyar system in the Pallivilangal anicut & channel of Parambikulam Aliyar Project in Coimbatore district.	1.39
3	Restoration works in anicuts, channels and sluices in the Old Aliyar system in the Ariyapuram anicut & channel of Parambikulam Aliyar Project in Coimbatore district.	1.24
4	Restoration works in anicuts, channels and sluices in the Old Aliyar system in the Vadakkalur anicut & channel of Parambikulam Aliyar Project in Coimbatore district.	1.21
5	Anicut across Nalliuppodai to feed Nambipuram tank in Thoothukudi district.	1.14
6	Bed dam across Vaigai river in Keelaperumkarai to feed Koothangal Kalvoy in Ramanathapuram district.	0.93
7	Anicut across Gridhumal river in Virudhunagar district.	0.87
8	Bed dam across Vaigai river to feed Milaganoor kalvoy in Sivagangai district.	0.75
9	Bed dam across Vaigai river in Arasadivandal village to feed Keelanattarkal in Ramanathapuram district.	0.68
10	Anicut across Peearu river to feed Thiruppalakkudi tank in Ramanathapuram district.	0.53

	Ramanathapuram district.	
11	Tank near Achankulam village in Thoothukudi district.	0.52
12	Tank near Subbalapuram village in Thoothukudi district.	0.50
13	Anicut across Nichabanadhi Mandhikulam in Tirunelveli district.	0.45
14	Tank near Chokkalingapuram village in Thoothukudi district.	0.41
15	Tank near Velayudhapuram village in Thoothukudi district.	0.38
16	Tank near Kumara ettayapuram village in Thoothukudi district.	0.26
17	Changing the Mudkondam into Masonry Anicut across the Irumbedu Eri surplus channel in Vandavasi taluk in Tiruvannamalai district.	0.26
18	Anicut across Markandanadhi near Cigarahalli village in Krishnagiri district.	2.33
19	Modernisation of Barur tank supply channel in Sonahalli village in Krishnagiri district.	5.15
20	Modernisation of Penukondapuram tank supply channel and its irrigation channel in Sonahalli village in Krishnagiri district.	4.27
21	Tank near Ayyappapuram village in Thoothukudi district.	0.23
22	Supply channel near Poombidagai village in Virudhunagar district.	0.21
23	Tank near Kattarankulam village in Thoothukudi district.	0.19
24	Tank near Melapandiapuram village in Thoothukudi district.	0.18
25	Bed Dam across Vaigai river to feed Kanur tank in Sivagangai district.	0.77

Schemes in progress and to be taken up

Sl. No.	Name of Scheme	Project cost (Rs. in crore)	Year of sanction	Status	Programme for Completion
1	Excavation of supply channel from Badethalav tank to Vennampalli in Dharmapuri district.	13.50	2001	85% completed	05/ 2008
2	Extension of Right Main Canal of Krishnagiri Reservoir Project to Bommasamudram, Kariamangalam etc. in Krishnagiri district.	7.06	2005	98% completed	05/ 2008
3	Dhali Channel system in Coimbatore district.	4.41	2005	71% completed	06/ 2008
4	Restoration works in anicuts, channels and sluices in the O.A.C.M Perianai Anicut in Coimbatore district.	1.81	2005	66% completed	06/ 2008
5	Anicut across Pambiar River in Villupuram district.	4.17	2005	74% completed	08/ 2008
6	Modernisation of Coleroon Regulator in Thanjavur district.	13.63	2005	75% completed	09/ 2008
7	Excavation of supply channel from Alathur channel to Haridharimangalam tank in Tiruvannamalai district.	0.26	2005	Work will be resumed on acquisition of land.	03/ 2009
8	Koilmalayar Reservoir in Vellore district.	12.98	2005	Proposed for dropping from NABARD assistance and to be taken up under State Funds	
9	New tank across Viswakudi Kallar Odai in Perambalur district.	7.23	2005		

10	Replacement of Mud korambu into masonry anicut across Vellar river for providing irrigation facilities to Mumbalai tank in Pudukkottai district.	1.57	2005	State Funds.

6.3.3. RIDF XI

		Schemes	Tanks
• Total Number of works	:	18	96
• Total Project Cost (Rs. in crore)	:	72.28	20.59
• Works completed	:	5	72
• Works in progress	:	10	23
• Works to be commenced	:	2	Nil
• Works proposed for dropping	:	1	1

Schemes Completed

Sl. No.	**Name of Scheme**	**Project cost** (Rs. in crore)
1	Lining the bed and sides of Manimuthar main canal from LS 0 to 26.845 km of Tambraparani system in Tirunelveli district.	15.38
2	Rehabilitation of anicuts across Karaipottanar river of Trichy district.	1.02
3	Reaming of drainage shafts from LS 300' to 4540' of Mettur dam in Salem district.	0.84
4	Anicut across Bargur river near Kuttur village of Krishnagiri taluk to feed G.D.Kuppam tank in Krishnagiri district.	0.31
5	Check dam across Vachukkal odai in SF No: 44 in Modakadu village in Namakkal district.	0.24

Schemes in Progress and to be taken up

Sl. No.	Name of Scheme	Project cost (Rs. in crore)	Year of sanction	Status	Programme for Completion
1	Rehabilitation of Sholayar Dam in Coimbatore district.	6.48	2005	42% completed	06/ 2008
2	Rehabilitation of Lower Bhavani Dam in Erode district.	7.29	2005	81% completed	06/ 2008
3	Rehabilitation of Ayyangudi Channel in Pudukkottai district.	0.73	2005	80% completed	06/ 2008
4	Modernisation of Kalakkamangalam Channel in Pudukkottai district.	4.29	2005	90% completed	09/ 2008
5	Tank across Odai near Silanaickenpatti in Madurai district.	1.70	2005	20% completed	05/ 2008
6	Modernisation of Kannadian Channel in Tirunelveli district.	17.79	2005	70% completed	06/ 2008
7	Modernisation of Sirumarudhur Channel in Pudukkottai district.	1.33	2005	15% completed	09/ 2008
8	Rehabilitation and Improvements to Mettur Canal system in Salem district.	11.35	2006	85% completed	06/ 2008
9	Conversion of existing Mud Korambu into Masonry Anicut across Maharajasamudram river in Pudukkottai district.	0.93	2006	85% completed	06/ 2008

10	Tank near Bommarajpet in Tiruvallur district.	0.33	2005	Work to start early	12/ 2008
11	Anicut across Kannankottai Hissa Rajan Eri in Tiruvallur district.	1.64	2008		02/ 2009
12	Anicut across Vilangudi Odai in Perambalur district.	0.35	2005	Land Acquisition in progress	03/ 2009
13	Kayamozhi kanam Channel in Thoothukudi district.	0.93	2005	Proposed to be dropped	---

6.3.4. RIDF XII

- Total Number of Schemes : 32
- Total Project Cost (Rs. in crore) : 23.31
- Works completed : 3
- Works in progress : 17
- Works to be commenced : 7
- Works proposed for dropping : 5

Scheme Completed

1. Formation of a Pond in SF no. 498 at a cost of Rs.0.08 crore at Muduthurai village in Coimbatore district.
2. Formation of a Percolation pond at a cost of Rs.0.03 crore at Sorakkainatham village in Vellore district.
3. Formation of a Percolation pond at a cost of Rs.0.13 crore at Simmikampattu village in Vellore district.

Schemes in Progress and at other stages

Sl. No.	**Name of Scheme**	**Project cost** (Rs. in crore)	**Year of sanction**	**Status**	**Programme for Completion**
1	Check dam across Sanganurpallam in Nanjundapuram Village in Coimbatore district.	0.35	2007	75% completed	05/ 2008
2	Check dam across Perumpallam in Tholampalayam Village in Coimbatore district.	0.19	2007	60% completed	06/ 2008

3	Pond in Kemmarampalayam across Parapallam in Coimbatore district.	0.34	2007	70% completed	05/ 2008
4	Extension, Renovation and Modernisation of Vetharampatti tank in Dharmapuri district.	0.16	2007	60% completed	05/ 2008
5	New pond across Panchanthangi Odai in Dindigul district.	0.50	2007	10% completed	09/ 2008
6	Rehabilitation of feeder canal of tank fed by Anguti Sunai from Jawadhu hills in Krishnagiri district.	0.83	2007	60% completed.	07/ 2008
7	Rehabilitation of check dam across Kodaganar near Nagampalli village in Karur district.	0.93	2007	20% completed	03/ 2009
8	Modernisation of R.S. Mangalam Big tank in Ramanathapuram district.	6.33	2007	20% completed	06/ 2009
9	Pond in Gudalur village in Coimbatore district.	0.32	2007	70% completed	05/ 2008
10	Anicut across Saraswathi river near Natrampalli village in Vellore district.	0.31	2007	50% completed	04/ 2008
11	Percolation pond across Kanar near Matrukal in Vellore district.	0.09	2007	20% completed	04/ 2008
12	Percolation pond in Kothur village in Vellore district.	0.06	2007	50% completed	04/ 2008
13	Percolation pond in Kommeswaram village in Vellore district.	0.09	2007	75% completed	04/ 2008
14	Percolation pond in Malayampattu village in Vellore district.	0.12	2007	75% completed	04/ 2008
15	Percolation pond in Melmayal village in Vellore district.	0.02	2007	10% completed	04/ 2008
16	Percolation pond in Dhanakondampalli Village in Vellore district.	0.13	2007	75% completed	04/ 2008

17	Percolation pond in Ramanayakkanpet Village in Vellore district.	0.12	2007	50% completed	04/ 2008
18	Check dam across Kurunganpallam in Palamangalam village in Erode district.	0.47	2007	Works will start shortly for Sl.No.18 to 24	
19	Check dam across Kurunganpallam in Kulavilakku village in Erode district.	0.23	2007		
20	New Pond in Kokkampalayam village in Erode district.	0.14	2007		
21	Rehabilitation of supply channel from Reddiyapatti to Karikali - Uddandampatti and chain of anicuts in Rudraksha Kombaiyar in Trichy district.	2.41	2007		
22	New tank in Polivakkam village in Tiruvallur district.	0.77	2007		
23	Check Dam in Mathuruttu Village in Namakkal district.	0.16	2008		
24	Percolation Pond in Krishnakuppam in Tiruvallur district.	0.17	2008		
25	New pond across Kannimar Odai (Nochi Odai) in Dindigul district.	0.12	2007	Works are proposed to be dropped	
26	Reservoir across Vellakalkanar near Vinnamangalam village in Vellore district.				
27	New pond across Lavaluthu odai in Theni district.	-	-		
28	Percolation pond in SF No.6 of Malayanur Chekkadi village in Tiruvannamalai district.	-	-		
29	New Pond in SF No 101 of Pudurmalayalapatty Village of Rasipuram Taluk in Namakkal district.	-	-		

6.3.5. RIDF XIII - Works to be taken up

Sl. No.	Name of Scheme	Project Cost (Rs. in crore)
1	Rehabilitation of GA canal from 58.68 Km to 92.20 Km in Orathanadu in Thanjavur district.	26.06
2	Rehabilitation of Kalingarayan Channel from Mile 0/0 to 56/5.5 in Erode district.	11.62

6.3.6. NABARD - Schemes under consideration

Eight schemes at a project cost Rs.137.89 crore are at advanced stage of consideration by NABARD. These are:

Sl. No.	Name of Scheme	Project Cost (Rs. in crore)
1	Rehabilitation of 27 Numbers of Non-System tanks in Devakottai taluk in Sivagangai district.	5.29
2	Rehabilitation of Grand Anicut and its branch canals.	126.30
3	Diversion of surplus water of Ramanadhi reservoir to command area of Jambu nadhi system in Tenkasi and Ambasamudram in Tirunelveli district.	3.61
4	Rehabilitation of Neenjal Maduvu anicut and P.V.Kalathur tank in Kancheepuram district.	1.50
5	Formation of a percolation pond near Veerappa Ayyanar Koil in Allinagaram Village in Theni district.	0.21
6	Rehabilitation of Ayyacholai Kattuvari Anicut and its feeding tanks in Pudukkottai district.	0.55
7	Construction of checkdam across Varattar in Vada Veerappanaikan patti in Theni district.	0.12
8	Rehabilitation of the Chitrakudi Vari and providing field inlets to provide submersion relief of the adjoining fields in Thanjavur district.	0.31

6.4. PART II SCHEMES

6.4.1. Year 2006-2007

Under Part II Schemes for 2006-2007, 19 schemes at a total cost of Rs.36.62 crore were approved, out of which 9 schemes have already been completed. 5 Schemes are at various stages of implementation, 3 schemes are to be taken up shortly and 2 schemes are proposed for dropping due to land acquisition problems.

Schemes completed

Sl. No	**Name of Scheme**	**Project Cost** (Rs. in crore)
1	Check dam across Karimalaipallam in Krishnagiri district.	0.12
2	Pond across jungle stream near Baleguli Village in Krishnagiri district.	0.10
3	New Pond across Ottupallam odai in Vellore district.	0.20
4	Improvements to the existing check dam at Melmittalam Village in Vellore district.	0.15
5	Conversion of first checkdam across Kattaipuliodai into percolation pond in Tirunelveli district.	0.08
6	New pond in D.Perumpalayam Village in Salem district.	0.16
7	Anicut across Vellar in Pudukkottai district.	0.25
8	New pond across Karadi odai in Dindigul district.	0.17
9	New pond in Kasilingapalayam in Erode district.	0.27

Schemes in Progress

Sl. No.	**Name of Scheme**	**Project cost** (Rs. in crore)	**Status**
10	Check dam for Udayendram tank in Vellore district.	0.61	30% completed
11	Supply Channel to feed Errakuttai tank in Vellore district.	0.57	50% completed
12	Masonry Kondam across the surplus course of Dusimamandoor tank in Thiruvannamalai district.	0.47	26% completed

13	Two Groynes at Theresapuram in Thoothukudi district.	7.10	45% completed
14	Groynes in Idinthakarai in Tirunelveli district.	6.20	60% completed
15	Bed Dam and Dividing Wall across Palar near Kavasampattu in Vellore district.	6.50	Fund provided by State Government in anticipation of NABARD's approval. Works will commence soon.
16	Providing dividing wall and construction of anicut across Koundanyanadhi near Chitthathur in Vellore district.	4.50	
17	Supply Channel from Jerthalav canal in Dharmapuri district.	6.30	
18	New Pond in Chatrapatti in Dindigul district.	0.15	Proposed to be dropped.
19	New tank across Karuppukoil odai in Dindigul district.	2.72	

6.4.2. Year 2007-2008

Under Part II Schemes for 2007-2008, 20 schemes at a total cost of Rs.9.28 crore were approved, out of which 6 schemes have been completed, 12 Schemes are at various stages of implementation and 2 schemes are to be taken up shortly.

Schemes completed

Sl. No.	**Name of Scheme**	**Project Cost** (Rs. in crore)
1	Anicut across Mattankulam vari of Tiruchirapalli district.	0.15
2	Check Dam / Recharge Shaft at Vannikonendal in Tirunelveli district.	0.03
3	Check Dam / Recharge shaft at Kulasekharanallur in Thoothukudi district.	0.04

4	Check dam / Recharge Shaft at Ammapalayam village in Salem district.	0.17
5	Study of Ground Water Assessment based on Mini Water Shed in Tiruvannamalai, Krishnagiri and Namakkal districts.	0.60
6	Renovation of Inspection Bungalow at Sriperumbudur in Kancheepuram district.	0.10

Status of other schemes

Sl. No.	**Name of Scheme**	**Project cost** (Rs. in crore)	**Status**
7	Anicut across Mukthanadhi in Karadi Chithur in Villupuram district.	0.26	20% completed.
8	Checkdam across Muthalaimuthuvari in Thanjavur district.	0.14	80 % completed.
9	Checkdam across Cholagampatti Vari in Thanjavur district.	0.20	70 % completed.
10	Grade wall across Veeracholan River in Nagapattinam district.	0.40	15% completed.
11	Checkdam across Perumpallam in Thekampatti village in Coimbatore district.	0.22	30% completed.
12	Dividing wall across Gridhamal River to feed Ambalathadi, Mangudi in Sivagangai district.	0.41	10% completed.
13	Grade wall across Vennar to feed Ragunatha Cauvery Channel in Thanjavur district	1.75	15% completed.
14	Additional suites in the Inspection Bungalow at Baluchetty Chatram in Kancheepuram district.	0.15	60% completed.
15	Renovation of project House at Upper Nirar in Coimbatore district.	0.20	40% completed.

16	Providing infrastructure facilities and improvements to the Park Areas in the Dam sites of Sathanur, Krishnagiri, Bhavanisagar, Mettur and Kelavarapalli.	2.50	80% completed.
17	Improvements to Nelvoy Maduvu in Kancheepuram district.	0.70	40% completed.
18	Anicut cum check dam across Valliyar in Eraniel village in Kanyakumari district.	0.60	Work just started.
19	Retaining wall across Valliyar river near Kalpady yela in Kanyakumari district.	0.22	Work to start early
20	Checkdam across Pukkathurai Odai in Kancheepuram district.	0.45	

6.4.3. Year 2008-2009

The Government has proposed to sanction Rs.7.38 crore for 28 works.

The works are listed below:

Sl. No.	**Name of Scheme**	**Project cost** (Rs. in crore)
1	Construction of a Check dam across Pulikuthi Odai in Sangolikuppam village in Cuddalore district.	0.29
2	Construction of an anicut across Narasimmapallam in Patta Gurubarahalli village in Krishnagiri district.	0.23
3	Conversion of Mudkondam into Masonrykondom in Panapadi Village in Villupuram district.	0.52
4	Construction of a Check dam across Karumeniyar river near Pallakurichi village in Thoothukudi district.	0.58
5	Construction of Checkdam across tributary of Thalugai river near Kanuvoi village in Trichy district.	0.10
6	Construction of check dam across Kannuthu Odai in K.Pudupatti village in Theni district.	0.28

7	Construcion of Head sluice and protection wall in Alanda anicut near Alanda Village in Thoothukudi district.	0.20
8	Construction of Gradewall across Regunatha Cauvery Channel near Alangulam offtake point in Mudukulathur in Ramanathapuram district.	0.17
9	Study of Ground Water Assessment based on Mini watershed in Trichy, Madurai, Erode, Karur, Tirunelveli and Virudhunagar districts.	0.82
10	Provision of Recharge model structure in Thanjavur Ground Water Circle campus.	0.01
11	Construction of Checkdam across Uppar odai in Erukkandurai Village in Tirunelveli district.	0.15
12	Construction of a Check dam across Koranganpallam in Elumathur Village in Erode district.	0.17
13	Construction of Checkdam across Deviyar River in Perumalpatti Village in Tirunelveli district.	0.38
14	Formation of a new pond across Bolipallam in SF No 18 of Pudupeerkadavu Village in Erode district.	1.20
15	Renovation of Existing Quarters at Adyar North lock and South lock campus in Buckingham canal section in Chennai	0.14
16	Construction of Compound Wall at Palar Anicut to protect from encroachment in Thirumalaicheri village in Vellore district.	0.04
17	Construction of new Luscar Quarters in Poiney anicut in Vellore district.	0.04
18	Renovation of Inspection Bungalow in Kaveripakkam tank in Vellore district.	0.09
19	Construction of Compound Wall, Watchman shed and renovation of existing Conference Hall in PWD Office complex in Vellore.	0.25
20	Construction of Kallanai Canal Sub Division office building at Pattukkottai	0.10

21	Construction of Flood Control Room with communication arrangements in Left Flank of Stanley Reservoir at Mettur Dam in Salem district.	0.10
22	Construction of Garage and providing Water supply arrangements to Pattinamkal Inspection Bungalow at Vadaseri in Kanyakumari district.	0.05
23	Construction of Toilet block in Manimuthar Dam for the benefit of tourists in Tirunelveli district.	0.02
24	Purchase of Computers and other necessary peripherals for Secretariat, Public Works Department	0.35
25	Purchase of Computers, peripherals and furniture, for the Offices of EIC, CEs & SEs of WRD.	0.05
26	Purchase of vehicles to the Chief Engineers of Public Works Department on replacement basis.	0.55
27	Purchase of Computer accessories to the offices of Chief Engineer, Pollachi Region, Coimbatore and Chief Engineer, Operation & Maintenance, Chennai	0.05
28	Construction of New Inspection Bungalow with 4 Suites in Mamallapuram.	0.45

6.5. National Agriculture Development Project (NADP)

The works under the Irrigation component of the NADP sanctioned in March 2008 at a cost of Rs.12.08 crore are listed below. The works include rehabilitation and improvements to tanks, canals and supply channels.

Sl. No	**Name of Scheme**	**Project Cost** (Rs. in crore)
1	Rehabilitation and improvements to 6 anicuts across Chinnar River in Krishnagiri district.	1.23
2	Improvements and Rehabiltation of 15 anicuts across Markendeya nadhi, Mathur river and Bargur River in Krishnagiri district.	0.75
3	Improvements to the Tamaraikulam	0.67

	tank and supply channel in Sindhalagundu village in Dindigul district.	
4	Rehabilitaiton of Right side Main Canal of Chennampatti anicut in Virudhunagar district.	0.85
5	Restoration of anicuts and supply channels in Santhanavardhini River in Dindigul district.	3.25
6	Rehabilitation and Modernisation of Kalinjur River Channel in Vellore district.	1.60
7	Rehabilitation and Modernisation of Goddar Reservoir near Velakalnatham village in Vellore district.	0.50
8	Rehabilitation and Modernisation of tanks in Kaniyambadi block in Vellore district.	1.00
9	Improvements to the Kadhirayan kulam supply channel in Kasavanampatti and Palayakannivadi village in Dindigul district.	0.75
10	Improvements and Rehabilitation of PWD anicuts in Chinnar Minor Basin in Dharmapuri district.	0.98
11	Improvements and Rehabilitation of 3 anicuts in Pennagaram taluk in Dharmapuri district.	0.50

7.0. FLOOD MITIGATION SCHEMES

7.1. Works proposed under NABARD - RIDF XIII

The NABARD has sanctioned a sum of Rs. 224.19 crore during October 2007 / February 2008 for 25 flood mitigation works. The list of works is given below:

Sl. No	**Name of Scheme**	**Project Cost** (Rs. in crore)
1	Standardising & Strengthening the bank of Cauvery LB at mile 88/1 to 115/0 in Trichy district.	15.43
2	Standardising & Strengthening the bank of Cauvery LB at mile 119/1 to 123/3 in Trichy district.	1.18
3	Standardising & Strengthening the bank of Cauvery LB at mile 0/0 to 3/7 in Trichy district.	2.60
4	Standardising & Strengthening the bank of Cauvery RB at mile 103/2 in Trichy district.	18.74
5	Standardising and Strengthening RB of Cauvery at mile 118/2 in Trichy district.	11.97
6	Permanent Protection to RB of Coleroon at mile 3 in Trichy district.	0.44
7	Standardising and Strengthening LB of Coleroon at mile 0 in Trichy district.	22.96
8	Standardising and Strengthening LB of Coleroon at mile 3/7 in Trichy district.	3.07
9	Permanent Protection to Srirangam Nattu voikkal in Trichy district.	38.86
10	Strengthening of Kodingal Drain LS 0/0 to 13/2 in Trichy district.	1.56
11	Improvements to Uyyakondan channel bank in Trichy district.	7.78
12	Improvements to the Ayyar River bank in Trichy district.	7.67
13	Improvements to the Koraiyar River RB in Trichy district.	7.63
14	Improvements to Ariyar riverbank in Srirangam in Trichy district.	2.53
15	Protection to Cauvery and Coleroon in Trichy district.	3.12

16	Providing regulator arrangements in Trichy district.	7.80
17	Standardising and Strengthening LB of Coleroon at mile 30/0 in Perambalur district.	10.27
18	Protection in LB of Coleroon from mile 47/6 to 67/3 in Perambalur district.	23.58
19	Standardising and Strengthening RB of river Cauvery from mile 51/0 to 66/2 in Karur district.	5.91
20	Standardising and Strengthening RB of river Cauvery from mile 66/2 to 71/2 in Karur district.	4.77
21	Standardising and Strengthening RB of river Cauvery from mile 71/2 to 75/5 in Karur district.	2.64
22	Standardising and Strengthening RB of Cauvery from mile 81/4 to 96/4 in Karur district.	8.29
23	Standardising and Strengthening RB of Cauvery from mile 96/4 to 103/7 in Karur district.	2.48
24	Permanent restoration of flood protection works to Sathiyar Odai from Thirupalai tank to Vandiyur tank in Madurai district.	5.81
25	Permanent restoration of flood protection works to Sellur tank in Madurai district.	7.10

LB = Left Bank RB = Right Bank

7.2. National Cyclone Risk Mitigation Programme (NCRMP)

The Government has sent a project proposal to Government of India in March 2007 which includes Water Resources component seeking funding under National Cyclone Risk Mitigation Programme. The funding is expected to be obtained from World Bank through Government of India. The Special Commissioner and Commissioner of Revenue Administration is the Nodal Officer for this project. The component of Water Resources Department relates to Improvements to Saline Embankments, Coastal Canals, Regulators, River Training Works etc., at a total cost of Rs.188.87 crore (Priority – I Rs.126.15 crore + Priority – II Rs. 62.72 crore). The approval of Government of India in the Ministry of Home Affairs is awaited.

7.3. Jawaharlal Nehru National Urban Renewal Mission Works (JNNURM)

It is the resolve of this Government to rehabilitate and improve the Chennai City Waterways as a permanent measure of flood protection. A comprehensive scheme at a cost of Rs.489 crore has been sent to the Government of India for assistance. This is under the consideration of the Government of India in the Ministry of Urban Development.

8.0. ANTI SEA EROSION WORKS

Under the Grants-in-Aid Programme recommended by the 12th Finance Commission the State received Rs.50 crore towards 33 Anti sea erosion works. Out of these, 25 works have been completed. The remaining 8 works are in progress. Apart from this, the State Government sanctioned Rs.1.98 crore for 3 new works, which are also expected to be completed by June 2008. The details of schemes sanctioned and their present status are:

8.1. Grants-In-Aid Programme - 12th Finance Commission

Works completed

Sl. No	Name of Work	Project Cost (Rs. in crore)
1	Anti Sea Erosion and coastal protection works in Ratchagar street of Agastheeswaram Taluk in Kanyakumari district.	4.80
2	Construction of RMS Wall at Marthandamthurai in Kanyakumari district.	0.80
3	Construction of RMS Wall at Chinnathurai in Kanyakumari district.	0.30
4	Construction of RMS Wall at Eraviputhenthurai in Kanyakumari district.	0.30
5	Construction of RMS Wall at Thoothur in Kanyakumari district.	0.23
6	Construction of RMS Wall at Poothurai in Kanyakumari district.	0.33
7	Construction of RMS Wall at Erayamanthurai in Kanyakumari district.	0.22
8	Construction of RMS Wall at Thengapattinam and Mullorthurai in Kanyakumari district.	0.60

9	Construction of RMS Wall at Kodimunai in Kanyakumari district.	0.33
10	Construction of RMS Wall at Periyavilaithurai in Kanyakumari district.	0.27
11	Construction of RMS Wall at Periakadu in Kanyakumari district.	0.32
12	Construction of RMS Wall at Kovalam in Kanyakumari district.	0.20
13	Construction of Groyne at Manakudi in Kanyakumari district.	6.00
14	Construction of RMS Wall from Thalankuppam to Nettukuppam.	2.30
15	Construction of Bell mouth from LS.126 to 946 m in Kottakuppam of Vanur Taluk in Villupuram district.	0.99
16	Construction of Groyne in Thanthrian Kuppam of Vanur Taluk in Villupuram district.	2.61
17	Construction of RMS Wall from Annai Sivagami Nagar Kuppam to Indira Gandhi Nagar Kuppam in North Chennai.	0.99
18	Construction of RMS Wall from Thalanguda to Devanampattinam in Cuddalore district.	3.00
19	Construction of Rubble mound sea wall at Poombuhar in Sirkali Taluk of Nagapattinam district.	1.78
20	Construction of Rubble mound sea wall at Tharangampadi Village in Tharangampadi Taluk of Nagapattinam district.	3.05
21	Construction of Groyne on the northern side of existing sand jetty for the sustained opening of Cooum River Mouth upto +4.200m.	1.32
22	Raising the south Groyne (+) 2.50 m to 4.2 for preventing sand by passing into the Cooum river mouth.	0.90
23	Removing sand shoals in the Cooum River mouth and at Bridge points upto Munroe Bridge for easy passage of flood flow and tidal exchange of seawater.	0.60
24	Reformation of RMS wall at Ramanthurai in Vilavancode Taluk of Kanyakumari district.	0.33

25	Construction of RMS Wall at Neerodithurai in Kanyakumari district.	1.50

Works in Progress

Sl. No	Name of Work	Project Cost (Rs. in crore)	Status
26	Construction of RMS wall in Vallavilaithurai in Kanyakumari district.	0.80	60% completed
27	Extension of Groyne at Periyakadu in Agastheeswaram in Kanyakumari district.	4.75	52% completed.
28	Construction of Groyne at Enayamputhanthurai in Kanyakumari district.	3.50	62% completed.
29	Construction of Rubble Mound sea wall at Ariyanattutheru in Nagapattinam district.	1.44	40% completed.
30	Construction of Rubble Mound Sea wall at Serunthur village (Velankanni) in Nagapattinam district.	0.53	80% completed.
31	Construction of Rubble Mound Sea wall at Kaduvaiyar and Kallar river in Nagapattinam district.	3.20	Work to start early.

Schemes sanctioned under 12th Finance Commission and State Fund (Part II 2006-2007)

Sl. No	Name of Scheme	Project Cost (Rs. in crore)	Status
32	Construction of Groyne at Idinthakarai in Thoothukudi district.	6.20	60% completed.
33	Construction of Groyne at Theresapuram in Thoothukudi district.	7.10	45% completed.

8.2. State Funded Schemes

Sl. No	Name of Scheme	Project Cost (Rs. in crore)	Status
1	Construction of RMS wall at Rajakkamangalamthurai in Kanyakumari district.	1.42	30% completed.
2	Construction of RMS wall at Kodimunai in Kanyakumari District.	0.23	90% completed.
3	Construction of RMS wall at Vaniyakudi in Kanyakumari District.	0.33	10% completed.

9.0 EMERGENCY TSUNAMI RECONSTRUCTION PROJECT (ETRP)

Under the World Bank assisted project, 9 works at a cost of Rs.19.271 crore was sanctioned for the re-construction of Water Resources infrastructure affected by Tsunami in Nagapattinam district. The components of works are desilting, widening and strengthening of banks of canals, drains, straight-cuts and reconstruction of drainage regulators. 7 works have been completed and other two works are in progress as shown below:

Works completed

Sl. No	Name of Scheme	Project Cost (Rs. in crore)
1.	Desilting and strengthening the banks of South Buckingham Canal, Manjalar drain, Strengthening the banks of Veeracholan drain, Nandalar Right Bank drains and straight cut Mahimalaiyar river.	2.44
2.	Strengthening Tsunami affected Coleroon diversion banks Koraithittu, Padianthittu and Kattur.	1.23
3.	Desilting and strengthening Nattukanni Manniar drain and strengthening Vellapallam Uppanar drain.	1.81
4.	Desilting, widening and strengthening banks of Vedaranyam canal L.S. 0 to 14.80km.	1.82
5.	Desilting, widening and strengthening banks of Vedaranyam	2.02

	canal L.S.14.80 to 31.200 k.m.	
6.	Desilting, widening and strengthening banks of Vedaranyam canal L.S. from 31.200 k.m to 56.800 k.m.	3.15
7.	Widening and strengthening the bank of Kaduvayar drain.	1.73

Works in progress

Sl. No	Name of Scheme	Project Cost (Rs. in crore)	Status
8.	Desilting and strengthening the Vellaiyar straight cut, Chakkaliyam voikal straight cut, Lawford straight cut, Nallar straight cut from Adappar straight cut, Muthiyar straight cut and Valavanar straight cut.	2.45	75 % completed
9.	Strengthening and widening the North Buckingham canal and reconstruction of Muduvanar drainage regulator.	2.63	85 % completed

10.0. CHENNAI CITY WATERWAYS

In order to keep the City Waterways clean and free from pollution, the State Government approved a multi disciplinary project, viz., Chennai City River Conservation Project at a total cost of Rs. 300 crore in 1998. The Tamil Nadu Slum Clearance Board and Corporation of Chennai are partnering with Water Resources Department in this work. The packages handled by Water Resources Department are given below :-

Name of Scheme	Revised cost (Rs.in crore)	Present Stage
Improvements to Buckingham canal	30.81	Completed.
Improvements to Virugambakkam - Arumbakkam drain, Otteri Nallah	11.31	Completed.

Improvements to Adyar, Adyar Corridor and Kosasthalaiyar	46.06	74% Completed.
Flood defences and resectioning of other Major drains in Chennai Metropolitan (Ambattur, Korattur, Madhavaram, Red Hills, Chembarambakkam, Pallikaranai) and Land Acquisition charges.	56.21	60% completed.
Velachery drain and Land Acquisition charges	6.30	95% completed.

Improvements of Cooum river a) From Sea mouth to Periyar Bridge	2.20	Work completed
b) From Periyar Bridge to Koyambedu	17.45	Work to start after eviction of encroachments

11.0. ARTIFICIAL RECHARGE OF GROUNDWATER THROUGH CHECK DAMS

Following the announcement in the Governor's Address in the Legislative Assembly, a master plan has been prepared by the State Ground & Surface Water Resources Data Centre (SG&SWRDC) for implementation of artificial recharge to ground water through check dams and other suitable structures at a cost of Rs.565 crore over a period of three years from 2008-2009. The works under the programme are proposed to be executed by Water Resources Department (WRD), Agriculture Engineering Department (AED), Tamil Nadu Water Supply and Drainage Board (TWAD) and Forest Department. The Nodal Agency for the implementation of this programme will be State Ground & Surface Water Resources Data Centre of the Water Resources Department. The project will be initially funded by the State Government. Meanwhile, the possibility of funding by the Government of India will be explored.

12.0. KRISHNA WATER SUPPLY PROJECT (KWSP)

As per the Agreement entered into between the Governments of Tamil Nadu and Andhra Pradesh in 1983 for drawal of water from river Krishna for Chennai City drinking water supply, the Andhra Pradesh Government has to release and reach at zero point a quantity of 12 TMC of water annually. This is programmed to reach in two installments i.e., 8 TMC of water from July to October and 4 TMC of water from January to April every year.

The Andhra Pradesh Government has released 27.58 TMC of water up to February 2007 since its inception in the year 1996. During the year 2007-08, 4.60 TMC of water has been realised from 3.8.2007 to 6.11.2007.

Sri Sathya Sai Central Trust has come forward to renovate the Kandaleru – Poondi canal, Link canal and feeder canal at an estimated cost of Rs.50.00 crore. The renovation work has been commenced in the Kandaleru-Poondi canal on 14.5.2007 and 10.25 km. of canal bund on both sides sectioned and construction of retaining wall for a length of 1005 metre have been completed. Remaining works are in progress and are expected to be completed by July 2008.

13.0. TAMIL NADU PROTECTION OF TANKS AND EVICTION OF ENCROACHMENT ACT, 2007

It has become imperative to protect the water bodies from encroachments and disuse. The tanks and their components, if not protected and restored to their original capacity, may cause reduction in area of cultivation and thereby

food grains production, depletion of ground water and environmental degradation.

In order to protect the tanks under the control of Water Resources Department, an Act entitled "Tamil Nadu Protection of Tanks and Eviction of Encroachment Act 2007" (TN Act: 8 of 2007) was legislated as per the announcement made on the floor of Assembly while moving the Demand for grant for the year 2007-2008. The Act and Rules have since come into force from 1.10.2007.

As a first step for purposeful and effective implementation of this Act, action has been taken for creating awareness among the general public especially at village level about the provisions of the Act and Rules and the need to keep the tanks in original shape through hand bills, wall posters, print media and tom-tom. Further follow up action has already been initiated for delineation of tank boundaries with the help of Survey staff, eviction of encroachments and planting of RCC poles along the tank boundaries as a measure of preventing potential encroachments. In the last three months of the year 2007-08, boundary delineation works, eviction of encroachment and planting RCC poles along the boundaries have been completed in respect of 316 tanks. The work will be intensively carried out during 2008-2009.

14.0. LINKING OF RIVERS WITHIN THE STATE

The Hon'ble Chief Minister in the 53rd National Development Council (NDC) Meeting urged the Hon'ble Prime Minister to provide funds for inter-linking of rivers within the State (intra linking) under the Accelerated Irrigation Benefit Programme (AIBP). In response to this, the National Development Council resolved that Inter linking of river projects within the State would also be extended with funding assistance under Accelerated Irrigation Benefit Programme. The Government of India based on this, has come forward to extend funding for intra linking of rivers under Accelerated Irrigation Benefit Programme.

In the meanwhile, the Government has taken the initiative to link the rivers within the State to primarily serve as flood carriers and as a measure of flood mitigation and to prevent water wastage and for the flood flows to reach the drought prone areas. In this direction, the following 3 links have been investigated into –

i) Cauvery – Agniar - South Vellar – Manimuthar – Vaigai – Gundar

ii) Tambiraparani – Karumeniar –Nambiar

iii) Pennaiyar – Cheyyar

The Detailed Project Report (DPR) for Tambiraparani-Karumeniar-Nambiar link has been prepared. Similarly, the DPR for the first component of Cauvery-Vaigai-Gundar has been completed and for the other component it is

under preparation. The DPR for Pennaiyar-Cheyyar is expected to be completed before June 2008. Taking the opportunity of the Government of India coming forward to extend funding under AIBP, these schemes will be posed to Government of India for consideration and sanction of the required financial assistance.

The Tamil Nadu Government in the Budget speech of March 20, 2008 announced to take up Tambiraparani-Karumeniar-Nambiar link project and construction of Kattalai Barrage across Cauvery during 2008-09 at a cost of Rs.369 crore and Rs.165 crore respectively from the State's own fund in anticipation of the funds from the Government of India.

15.0.INTER STATE SUBJECTS

15.1.Cauvery Water Disputes Tribunal

The Cauvery Water Disputes Tribunal constituted in June 1990 delivered its final order on 5.2.2007.

The Tribunal has determined the utilisable quantum of waters of the Cauvery at the Lower Coleroon Anicut site on the basis of 50% dependability as 740 TMC and accordingly allocated water to the States of Kerala, Karnataka, Tamil Nadu and the Union Territory of Puducherry. From this quantum, the Tribunal has among others allocated 419 TMC for the beneficial uses of Tamil Nadu. In addition to that the Tribunal has reserved 14 TMC for environmental protection and inevitable escapages to sea. The Tribunal has also ordered that the Government of Karnataka shall deliver 192 TMC annually on monthly basis at the interstate contact point presently identified as Billigundulu Gauge and discharge station located on the common border. The above quantum of 192 TMC water shall comprise of 182 TMC from the allocated share of Tamil Nadu and 10 TMC of water for environmental protection.

Out of 30 TMC allocated to Kerala the unutilized water from Kerala's share shall be used by Tamil Nadu till such time Kerala uses its share. The use of ground water by any State has not been reckoned as use of water of the river Cauvery. The Tribunal has further suggested for the constitution of a Cauvery Management Board and the Cauvery Water Regulation Committee to implement the order effectively. The composition of the Board and the Committee and the guidelines for the implementation machinery have also been suggested.

The interim order already passed by the Tribunal on 25.6.1991 will be in force until the final order is published by the Government of India in the Official Gazette.

Kerala, Karnataka, Tamil Nadu, Puducherry and also the Government of India have filed Petitions in the Tribunal seeking explanation or guidance under Sec.5 (3) of the Inter State River Water Disputes Act, 1956, in respect of certain aspects of the final order and decision of the Tribunal. The Tribunal in July 2007 has held that after the orders of the Supreme Court, the applications filed before it could be taken up for consideration. This is because Civil Appeals have been

filed by Tamil Nadu, Kerala and Karnataka against the Tribunal order and they are pending before the Supreme Court. Tamil Nadu has also filed an application to restrain the Karnataka Government from taking up lift irrigation schemes, renovation of tanks and construction of check dams in the guise of mini hydel projects.

The Government will be closely following these and will take all necessary steps to safeguard the interests of the farmers of Tamil Nadu in the Cauvery basin.

15.2. Palar Issue

The Tamil Nadu Government on 10.2.2006 filed a Suit in the Supreme Court to restrain the Andhra Pradesh Government from constructing a reservoir across the interstate river Palar at Ganeshapuram, Kuppam Taluk, Chittoor District, Andhra Pradesh and also in any of its Tributaries. The Supreme Court in its order dated 7.1.2008 has made it clear that the Government of India can consider the representation of Tamil Nadu pending before it and that the Andhra Pradesh Government may also be heard in the matter. The representation filed may be considered and disposed of and the Government of India would be at liberty to settle the disputes between the two States.

Following this, a meeting at official level was held by the Chairman, Central Water Commission in New Delhi on 11.3.2008. The officers of both the States placed their respective contentions and arguments. After deliberations it has been decided that the Andhra Pradesh Government will not go ahead with the project before the issue is settled. Both the Governments have been asked to provide certain technical information before the end of April 2008 so that another meeting can be called around mid-May, 2008.

The Government will take all endeavours to protect the interests of the people dependant on Palar water.

15.3. Raising the water level in Mullai Periyar Dam

The Full Reservoir Level of Periyar Dam is 152 ft. The water level was temporarily brought down to 136 ft. to facilitate the Tamil Nadu Government to carry out certain strengthening measures suggested by the Central Water Commission to get the dam function as good as a new dam. The Government of Kerala has been holding the view that the water level should be kept at 136 ft. at all times.

The Supreme Court on 27.2.2006 permitted Tamil Nadu to initially raise the water level from 136 ft. to 142 ft. and to carry out the remaining strengthening measures. After the strengthening measures are completed to the satisfaction of the Central Water Commission, independent experts would examine the safety angle before the water is permitted to be raised to 152 ft.

The Kerala Government, in order to nullify the Supreme Court order amended its Kerala Irrigation and Water Conservation Act, 2003 by enacting

“Kerala Irrigation and Water Conservation (Amendment) Act, 2006”, which fixed the FRL of Mullai Periyar Dam as 136 ft.

The Tamil Nadu Government filed a Suit in the Supreme Court on 31.3.2006 to declare the Kerala’s Amendment Act as unconstitutional in its application and effect on the Mullai Periyar Dam. The Suit is still pending in the Supreme Court.

In the meanwhile, the Hon'ble Chief Ministers of Kerala and Tamil Nadu held talks in the presence of the Hon'ble Union Minister for Water Resources in November 2006 as per the orders of the Supreme Court. Subsequently, a meeting of Hon’ble Ministers in-charge of Public Works Department/Water Resources of the two States was also held in the presence of the Hon'ble Union Minister for Water Resources in December 2006. During the meetings, the Tamil Nadu Government in unambiguous terms informed that the dam on being strengthened is like a new dam and hence there is no need and necessity to go in for the construction of a new dam. The talks did not yield any fruitful results. Hence the Tamil Nadu Government reported the failure of talks to the Supreme Court and the Government of India. The Supreme Court is proceeding with the case framing issues and getting ready to hear arguments.

When the Hon'ble Chief Minister met the Hon’ble Prime Minister in New Delhi on 18.12.2007, the Hon'ble Prime Minister desired that the Chief Ministers of the two States may again discuss the Mullai Periyar Dam issue. Accordingly a meeting of the Hon'ble Chief Ministers of Kerala and Tamil Nadu was held in the presence of the Hon'ble Union Minister for Water Resources on 19.12.2007 in Delhi. During this meeting in response to Kerala’s expressed concern about alleged seepage in the Dam, the Hon'ble Chief Minister of Tamil Nadu suggested that the seepage measurements may be over seen by Engineers who do not belong to either Tamil Nadu or Kerala and drawn from other States through the Central Water Commission, a neutral agency. The Hon'ble Chief Minister of Kerala agreed to consider this suggestion and inform the Government of India.

When the Suit again came up before the Supreme Court for further consideration, the Supreme Court has directed the two States to file the affidavit of the Witnesses proposed and adjourned the matter to July, 2008 for further hearing.

The Government is keenly watching this issue and will take all the steps to safeguard the interests of Tamil Nadu.

15.4. Parambikulam Aliyar Project – Review of Agreement

An agreement between the Governments of Tamil Nadu and Kerala was entered into on 29.05.1970 with retrospective effect from 09.11.1958 for utilization of flows in the rivers of Anamalayar, Nirar, Sholayar, Parambikulam, Palar, Aliyar and the streams flowing into them for generation of Hydro Electric Power, irrigation, drinking water supply and industrial use in both the States. The Parambikulam-Aliyar Project Agreement was due for review on 09.11.1988.

Accordingly, both the Governments exchanged the documents for review on 21.09.1989 and held several Inter State Level discussions since then.

As decided in the Minister level meeting held between Governments of Kerala and Tamil Nadu on 10.06.2002 in Chennai, a Technical Committee comprising of Engineers from each State was constituted to identify the areas where amendments are required in the Agreement and the Technical Committee submitted its Report to the respective Governments. This Report has been discussed and differences between the two States have been narrowed down. However, the review could not be completed till now.

The Hon'ble Chief Minister has now conveyed to the Hon'ble Chief Minister of Kerala that talks may be resumed to complete the first review of the agreement and suggested that a meeting at the level of Chief Secretaries may be held initially. The meeting is likely to be held shortly and the Chief Secretaries are in correspondence to fix a suitable date for this purpose.

The Tamil Nadu Government will continue to press the Kerala Government for the early completion of the first review of Parambikulam-Aliyar Project Agreement.

15.5. Pandiyar – Punnampuzha Scheme

The West flowing Pandiar – Punnampuzha, an interstate river, originates in the high peaks of Nilgris in Tamil Nadu, flows west and joins Chaliyar, which finally drains into the Arabian Sea.

In 1965, an understanding was reached between Tamil Nadu and Kerala 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 (2 X 50 MW) for the first stage and 150 MW in the next stage. The Union 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.

The Government will pursue with the Government of Kerala for implementation of the Pandiar – Punnampuzha Scheme.

15.6. Peninsular Rivers Links

The National Perspective Plan of the Government of India envisages linking of major rivers in the Country by transferring the surplus water available in one basin to another. There are two components under this plan viz., Himalayan Component and Peninsular Component. The National Water Development Agency is the prime organisation set up by the Government of India to investigate the feasibility of linking of rivers in the Country.

The Peninsular Component consists of linking Mahanadhi – Godavari – Krishna – Pennar – Palar – Cauvery – Vaigai and then on to Gundar. The expected overall surplus from Mahanadhi and Godavari up to a quantity of 925 TMC of water is proposed to be utilized for various purposes like irrigation, drinking water, industrial use etc. under the Peninsular component. This will benefit about 3 Million hectares of additional irrigation and substantial additional hydro power besides offering several other intangible benefits. Tamil Nadu is expected to get about 214 TMC at the border and the additional area that could benefit by this scheme is estimated as 7.90 lakh ha.

The Hon'ble Chief Minster in the 53rd and 54th meetings of the National Development Council has once again emphasized the urgency to interlink the Peninsular Rivers in order to augment the water resources, and revitalize the agricultural sector. It was stressed that the required fund allocations should be made for the interlinking of rivers project during the XI Plan itself.

Meanwhile, Tamil Nadu Government has on its own initiative addressed the State Governments of Karnataka, Madhya Pradesh, Chattisgarh, Kerala, Maharashtra, and Puducherry, for a meeting to discuss and work towards creating an environment of consensus for interlinking the Peninsular Rivers. This is yet to materialize.

The Tamil Nadu Government will continue to urge the Government of India for the quick implementation of the Peninsular linkage.

15.7. Pamba – Achankoil – Vaippar Link

The NWDA has formulated the Pamba-Achankoil-Vaippar Link Project, which envisages diversion of surplus waters of Pamba and Achankoil Rivers of Kerala to Tamil Nadu under the Peninsular Rivers component of the Interlinking of Rivers (ILR) Project. The project proposal contemplates diversion of 22 TMC of water to Tamil Nadu to irrigate an ayacut of 91,400 ha. in Sankarankoil, Kovilpatti, Sivagiri, Srivilliputhur, Rajapalayam, Sattur and Tenkasi taluks of Tamil Nadu and will also help to generate peak power of 500 MW. The quantum of 22 TMC to be diverted by this link amounts to only about 20% of the surplus water available in Pamba-Achankoil Rivers.

The Government of Tamil Nadu has given its acceptance to the proposal, whereas the Government of Kerala is not willing to give its concurrence.

The Hon'ble Chief Minister of Tamil Nadu earlier 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 is actively pursuing the matter with the Government of India to seek the concurrence of the Kerala Government for the implementation of this project.

16.0. GROUND WATER - STATE GROUND AND SURFACE WATER RESOURCES DATA CENTRE (SG&SWRDC)

Water resources in this State are limited and the demand for water is increasing manifold. The State has utilized the surface flow almost to the full extent. Hence, conservation and management of ground water is the need of the hour so as to make the State of Tamil Nadu to attain self-sufficiency and sustainability in the groundwater resources.

Groundwater being a dynamic replenishable resource requires continuous exploration, monitoring and assessment involving multi disciplinary studies.

Effecting controlled usage of groundwater and preventing over exploitation and to ensure its planned development and proper management in the State are the prime objectives of the State Ground & Surface water Resources Data Centre which is currently engaged in the following tasks.

- Continuous monitoring of groundwater level and quality through its monitoring network spread all over the State.

- Conducting groundwater surveys, namely Hydro-geological survey and Geophysical survey.

- Periodic assessment of groundwater potential of the State.

- Monitoring and protecting groundwater from the seawater intrusion through the monitoring network all along the coastal stretch of Tamil Nadu.

Under part II schemes 2008-09 assessment of groundwater potential has been proposed to be taken up on mini water shed basis in Trichy, Madurai, Erode, Karur, Tirunelveli and Virudunagar districts at a cost of Rs 0.82 crore.

17.0.INSTITUTE FOR WATER STUDIES (IWS)

The Institute for Water Studies was established in 1974 to plan, assess and manage the water resources scientifically in each river basin of Tamil Nadu.

The 34 River Basins in Tamil Nadu are grouped into 17 Major River basins and sub divided into 127 sub basins. Micro level studies are conducted on water demands for agriculture, domestic and industrial needs in each basin. After assessing the demands for various uses and the Surface and Ground water potential, the water balance for each basin is arrived at. In this micro level river basin study, Remote Sensing and Geographic Information System are adopted for preparation of thematic maps like geology, geomorphology, land use, lineaments, depth to bedrock, water quality and water level in each river basin.

Out of 17 river basins, so far, 14 river basins studies have been completed. The study on Agniar Basin is in progress. The findings of study are disseminated to the Regional Water Resources Department Engineers and water user departments for further planning, and finalising schemes related to agriculture and management of water resources.

In the case of IAMWARM projects, suggestions are given for changing the cropping pattern wherever necessary. Optimal water management techniques such as 'sprinkler' and 'drip irrigation' methods are suggested for adoption in low rain fall areas.

The thematic maps derived in each river basin will be utilized in the selection of sites for check dams, pond schemes etc.

The other important activities are:

- **Water Resources Research Fund and Research Studies (WRRF)**

Under WRCP, utilising WRRF, 38 Research Studies were done through various Institutions and Universities in the field of Irrigation, Water Management, Environment, Pollution control, Groundwater, etc., and the results of the studies are utilised for preparing the irrigation schemes.

Now two research studies have been taken up under WRRF.

- **Special studies**

"Managing floods in Tamil Nadu river basins by arresting run off, ground water recharging as inter basin transfer". This study will be useful to harness the floodwater.

"To compare the ayacut area position in 2004 with reference to 1980 aerial photographs using satellite data"

- **River Basin Management Board**

  The River Basin Management and Development Board has been established for Palar and Tamiraparani River Basins. It is supported by a Technical Secretariat in the Institute for Water Studies.

18.0. IRRIGATION MANAGEMENT TRAINING INSTITUTE (IMTI)

Irrigation Management Training Institute was established in the year 1984 to strengthen institutional capabilities of Water Resources and other related Organizations, by imparting training to all those involved in irrigated agriculture including farmers, exposing them to modern techniques in irrigation management and also to conduct action research in irrigation systems. Regular training programmes are conducted on various aspects of irrigation management including Participatory Irrigation Management (PIM), application of computer software in irrigation management, human resources development etc.

The major topics that are covered under irrigation management are modern irrigation methods, on-farm water budgeting, flow measurement, operation and maintenance of irrigation systems, flood and drought management, crop water requirement and operation plan, efficient agricultural practices like precision farming and organic farming.

Training programmes are organized for the field staff of Water Resources Department, Agriculture and Agricultural Engineering Departments on irrigation management. Training programmes are also undertaken on the specific requests from other organisations on specialized topics. 45 training programmes and 72 courses were conducted during the year 2007-08 for the Engineers, farmers, field staff and officials of other departments. For the year 2008-09, it is proposed to conduct 136 training programmes that would cover about 2000 officials of various departments and 2500 farmers.

19.0. DIRECTORATE OF BOILERS

The Directorate of Boilers is primarily the implementing authority of the provisions of the Indian Boilers Act, 1923, a Central Act administered by the State for the safe operation of the boilers and to ensure safety of the public life and property. This Directorate also discharges the following responsibilities:

- plays a crucial role in the development of Boilers and Boiler Ancillary Industries in the State.

- implements the provisions of the Tamil Nadu Boiler Attendants' Rules, 1964 and the Tamil Nadu Boiler Operation Engineers' Rules, 1965 to ensure the boilers

used in the industries are operated by certified Boiler Operation Engineers and Boiler Attendants.

- conducts Tamil Nadu Boiler Attendants Examination for I-Class, II-Class & III-Class certificate of competency and the Tamil Nadu Boiler Operation Engineers' Examination.

- conducts certificate of competency tests to high-pressure welders employed in Boiler manufacturing units and other user industries.

- ensures that the Boiler and Boiler components are designed and manufactured as per the provisions of the Indian Boiler Regulations, 1950.

20.0. SAND QUARRY

The Government constituted a six member High Level Committee, 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 2.10.2003 and entrusting the sand quarry to the Government through a single department viz., the Public Works Department. Accordingly, the Public Works Department started operating sand quarries.

During October 2003, Government sanctioned 239 sand quarries and sand was sold at the rate of Rs.1000/- per lorry load (2 units) ex-depot. Subsequently, Government reduced the sale price of sand from Rs.1000/- to Rs.600 /- per lorry load during June 2004.

At present, sand is being quarried and sold by Water Resources Department directly from about 130 quarries approved by the District Collectors. During the year 2007-08, the revenue generated till March is Rs. 121 crore.

DURAI MURUGAN
MINISTER FOR PUBLIC WORKS AND LAW