PUBLIC WORKS DEPARTMENT
IRRIGATION

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O. PANNEERSELVAM
MINISTER FOR FINANCE AND PUBLIC WORKS

INDEX

PUBLIC WORKS DEPARTMENT

"நீர்வளம் பெருகினால் நிலவளம் பெருகும்

நிலவளம் பெருகினால் உலகம் செழிக்கும்"

– மாண்புமிகு தமிழ்நாடு முதலமைச்சர்
புரட்சித்தலைவி அம்மா அவர்கள்

INTRODUCTION:

Water is the elixir of life for the existence of all living things including human kind. Water is essential for life to flourish in this world. Therefore, the Great Poet Tiruvalluvar says,

"நீர்இன்று அமையாது உலகெனின் யார்யார்க்கும்
வான்இன்று அமையாது ஒழுக்கு" (குறள் 20)

(The world cannot exist without water and order in the world can exists only with rain)

Tamil Nadu is mainly dependent upon Agriculture for it's economic growth. Hence, timely and adequate supply of "water" is an important factor. Keeping the above in mind,

the **Hon'ble Chief Minister** with her vision and intention, to make Tamil Nadu a **"numero uno"** State in the country with "**Peace, Prosperity and Progress"** as the guiding principle, has been guiding the Department in the formulation and implementation of various schemes for the development and maintenance of water resources.

On the advice, suggestions and with the able guidance of **Hon'ble Chief Minister**, the Water Resources Department is maintaining the Water Resources Structures such as, Anicuts, Tanks etc., besides rehabilitating and forming the irrigation infrastructure, which are vital for the food production and prosperity of the State.

WATER RESOURCES DEPARTMENT

1. ABOUT THE DEPARTMENT

1.1. Organisation set up of the Department

The Public Works Department is functioning with two Wings viz., Buildings Organisation and Water Resources Department. In the Water Resources Department, there are four Regional Chief Engineers with headquarters at Chennai, Tiruchirappalli, Madurai and Coimbatore. They are designated as Basin Managers of the river basins in their jurisdiction. Apart from this, there are three Chief Engineers taking up specialised functions such as Plan Formulation, Design, Research and Construction Support, Operation and Maintenance, functioning with headquarters at Chennai. One Chief Engineer, heading the State Ground and Surface Water Resources Data Centre at Taramani, Chennai

monitors the ground and surface water status of the State. Water Studies are being carried out by Institute for Water Studies at Taramani, under the Chairmanship of a Chief Engineer. Under the control of a Chief Engineer, Irrigation Management Training Institute, Tiruchirappalli provides training to the Engineers, Officials and the farmers. The Engineer-in-Chief, Water Resources Department and Chief Engineer, (General), Public Works Department, co-ordinates the works of all these Chief Engineers and acts as Technical Head of the Water Resources Department .

1.2. SURFACE WATER STATUS

Tamil Nadu has 34 Rivers which have been grouped into 17 major River basins and 127 Sub-basins. The annual average rainfall of the State is **911.60 mm.** The total Surface water potential of the State is **853 TMC ft.,** which includes 275 TMC ft. contributed by the neighbouring States. The total

storage capacity of the 89 dams in the State is **238.58 TMC ft**. Out of the total 39,202 tanks in Tamil Nadu, 13,779 major tanks are being maintained by the Water Resources Department. Sustained and continuous efforts are being taken to increase the water use efficiency of the irrigation systems of the State.

1.3. GROUND WATER POTENTIAL

As per recent assessment, the level of ground water usage increased up to 80%. For the effective implementation of the schemes, 386 Blocks in the State have been categorised based on the degree of extraction of ground water. 139 blocks are categorized as over-exploited, 33 blocks as critical, 67 blocks as semi-critical, 136 blocks as safe and 11 blocks as Saline/poor quality blocks. Further, a comprehensive Firkawise categorisation is underway.

1.4. State Ground and Surface Water Resources Data Centre - Monitoring and Regulation of Ground water

In order to improve the ground water level and the quality, the State Ground and Surface Water Resources Data Centre (SG & SWRDC) is assessing the ground water potential periodically.

For effective monitoring, the number of observation wells have been increased to 4,839 (3,280 open wells, 1,559 piezometers), in addition to 284 observation wells (174 open wells, 110 piezometers) along the coast for Sea Water Intrusion Study purpose.

Maintenance of Weather Stations

To know the importance of the inter-relationship between the rainfall, runoff and infiltration, the various parameters such as rainfall, evaporation, temperature, wind

velocity, relative humidity etc., are being monitored by this department in 45 weather stations in all the river basins.

Data Dissemination

The data generated through the activities of this department regarding ground water, surface water and water quality, are being disseminated to the students, research scholars, NGOs and private organizations on cost basis.

Aquifer Mapping and Management of Aquifer in Tamil Nadu

Aquifer Mapping and Management of Aquifer is very essential for the State, since the ground water potential is limited. The aim is to study the 13 major aquifer systems in Tamil Nadu. For the first phase of the study, 9 Aquifer systems covering 17 Districts were selected.

In the Zone I, seven Districts, namely Tiruvallur, Chennai,

Kancheepuram, Villupuram, Cuddalore, Vellore and Tiruvannamalai are selected for aquifer identification through mapping and for the management aspects of the study.

In the Zone II, six Districts, namely Pudukottai, Karur, Krishnagiri, Dharmapuri, Salem and Nagapattinam are selected.

In the Zone III, four Districts namely, Dindigul, Theni, Madurai and Virudhunagar are selected.

1.5. State Water Resources Management Agency (SWaRMA)

SWaRMA is engaged in the process of building a strong e-Governance tool with inter-sectoral common data base which will be a GIS based web enabled one, to help towards efficient integrated water resources management and regulation for better service delivery.

This data base will be a comprehensive solution for accessing water data, capable of Geo-Visualization as an e-Governance tool which will help administrators in foremost management of water resources and in taking Tamil Nadu forward for optimum utilisation of created irrigation potential and to maximize crop production per unit of water.

1.6. INSTITUTE FOR WATER STUDIES (IWS)

This Institute studies the hydrological details using Satellite imagery.

Remote Sensing and GIS Unit Activities/Functions:

(a) Re-aligning the River boundaries of all 17 River basins using satellite data.

(b) Preparation of Basin Maps in the scale 1:50,000.

(c) Collection and hosting of Basin-wise data like surface flows

and available Ground water details on the web-site for study purposes.

Unique coding for WRD Tanks

A new initiative, the first in the country undertaken by IWS is the unique coding of WRD Tanks.

All the details of 13,779 tanks of Water Resources Department were digitized and attributes were generated with unique code for each tank. The details of tanks are tabulated according to Taluk and District wise.

Crop Assessment in Cauvery River Basin

Seasonal crop assessment in entire Cauvery river basin was done in collaboration with Institute of Remote Sensing, Anna University using satellite data.

Preparation of Thematic Maps through Satellite Imagery

Thematic maps on 1:50000 scale were prepared from spatial and non spatial data for Palar river basin which are essential for water resources management and planning in the basin.

1.7. Irrigation Management Training Institute (IMTI)

Irrigation Management Training Institute (IMTI) is functioning at Tiruchirappalli. This institute imparts field training programmes to the farmers and Water Users' Associations in the State on Capacity Building, Water Management and Participatory Irrigation Management, Organic Farming and Integrated Farming, Low Input High Margin Agriculture, Management Techniques for Major Irrigated Crops, Irrigated Nutrient Management of Sustainable Agriculture, Bio-inputs for Sustainable Agriculture and SRI Techniques through this Institute

under State grants, DWDA and NABARD funds. 192 training Programmes were organised by IMTI to the farmers and 7,556 farmers were trained during the last three years.

Overall, this institute has conducted 469 training programmes to the farmers and officials of Water Resources, Agricultural Engineering, Agriculture and Horticulture Departments and 14,004 participants were trained during the last three years.

1.8. INSTITUTE OF HYDRAULICS AND HYDROLOGY (IHH)

This institute, a wing of Water Resources Department located at Poondi, Tiruvallur District, is headed by a Director (Superintending Engineer) under the Control of Chief Engineer, Design, Research and Construction Support.

In the Hydraulics Division, model studies of Hydraulics, Hydrology and Coastal problems are carried

out. Further, this division monitors shore line changes of Tamil Nadu coast and evaluation of Coastal protection works.

Watershed Management Board Division, Pollachi, formed during 1973, is engaged in undertaking sedimentation and watershed management studies in selected reservoirs of Tamil Nadu for arriving up-to-date reduction in storage capacity due to sedimentation. So far, this division has carried out sedimentation studies in 36 Irrigation Reservoirs, 13 TANGEDCO Reservoirs, 7 Major Tanks, 2 Water Supply Reservoirs and 1 Tourism Reservoir.

1.9. DIRECTORATE OF BOILERS

The Directorate of Boilers, Tamil Nadu is the enforcing authority of the Boilers Act, 1923, a Central Act administered by the State for the safe operation of the Boilers and to ensure the safety of public life and property. The Directorate of Boilers plays a crucial role in the

phenomenal development of Boilers and Boiler Ancillary Industries in the State of Tamil Nadu which is pioneer in the field of Boiler manufacturing, Foundries, Forge shops, Tubes and Pipes manufacturing units, etc.

The Directorate of Boilers conducts Examination, under Boiler Attendants Rules, 2011 and Boiler Operation Engineers Rules, 2011, for issue of Class-I and Class-II certificate of competency for Boiler Attendants and the Certificate of Proficiency for Boiler Operation Engineers.

The Directorate of Boilers conducts tests to high pressure Welders employed in Boiler manufacturing units, Boiler Ancillary Units and Boiler Repairers organisations and issues competency certificates to the successful candidates. The Directorate of Boilers is responsible for detecting and curbing the operation of the unregistered and uncertified Boilers.

2.0. HISTORIC ACHIEVEMENTS

(A) Mullai Periyar Dam – Historic Judgement

As a result of the continuous and tireless efforts of the **Hon'ble Chief Minister**, the Supreme Court of India on 07.05.2014, ordered that the water level in the Mullai Periyar Dam can be increased to 142 ft, initially, and the balance strengthening works and maintenance works can be undertaken by Government of Tamil Nadu. As per the judgement, the Supervisory Committee Constituted to restore the water level to 142 ft, decided to implement the judgement after inspecting the dam on 17.07.2014. The water level in the Mullai Periyar Dam is set to raise 142 ft a historic achievement for the people of Tamil Nadu, which is made possible only because of the persistent efforts and constant guidance of the **Hon'ble Chief Minister**.

- Tamil Nadu putforth its arguments before the Empowered Committee,

constituted as per the orders of the Five Member Constitution Bench of the Supreme Court of India, that the existing Periyar dam is safe in all respects and therefore there is no need for a new dam. The **Hon'ble Chief Minister** sanctioned a sum of Rs. 1.38 crore, for conducting the tests / investigations as requested by the Empowered Committee. Tamil Nadu carried out several Investigations and Tests on the dam and based on the results obtained therefrom, the Empowered Committee, in its report filed before the Supreme Court on 25.04.2012, has concluded that the dam is hydrologically, structurally and seismically safe.

- On the issue of Kerala Irrigation and Water Conservation (Amendment) Act, 2006, the Five Judges Constitution Bench of Hon'ble Supreme Court delivered its Judgment on 07.05.2014. In the judgment, it is ordered that the Suit has been decreed, holding inter-alia, that the " Kerala Irrigation and Water Conservation (Amendment)

Act, 2006", is unconstitutional in its application to the Mullai Periyar dam and the agreement executed between the two States in 1886 and 1970 is valid and binding. Further, it has been ordered in the judgment that the State of Kerala is restrained from interfering and obstructing Tamil Nadu from raising the water level upto 142 ft, and carrying out the maintenance and strengthening works.

The Hon'ble Supreme Court has stated that the new dam proposal of the State of Kerala cannot be thrusted upon Tamil Nadu.

Further, to allay the apprehensions of Kerala on the safety of the dam, "**though none exists"**, the Court has constituted 3 Member Supervisory Committee headed by Central Water Commission representative (Chairman) and one representative each from the two States - Tamil Nadu and Kerala. It is mentioned in the judgment that, under the supervision of this

committee the water level of the dam will be increased to + 142 ft.

- In the Memorandum presented by the **Hon'ble Chief Minister** to the Hon'ble Prime Minister on 03.06.2014, a request was made to immediately constitute the Supervisory Committee. The Government of India accepted this and on 18.06.2014 gave its nod for the formation of the Committee. Subsequently, the Ministry of Water Resources, Government of India formed this Committee on 01.07.2014 with the following officials:

  1. Thiru L.A.V. Nathan (Chairman)
  2. Dr. M. Saikumar
     (Member, State of Tamil Nadu)
  3. Thiru V.J. Kurien
     (Member, State of Kerala)

  Following the request of Tamil Nadu to immediately convene the meeting, the 1st meeting of the Supervisory Committee was held on

08.07.2014 at Thiruvananthapuram and the Committee decided as follows:-

i. The next sitting of the committee for pre-monsoon inspection is fixed on 17.07.2014.
ii. The office of the committee shall be provided by Government of Kerala at Kumuli.
iii. The request by the Government of Tamil Nadu to work out modalities of raising the water level to 142 ft. will be discussed in the next meeting of the committee.

The Committee met again on 17.7.2014. The Committee inspected the dam extensively and had a meeting therafter. It was decided in the meeting "to restore the water level to 142 ft. Which has been ordered by the Hon'ble Supreme Court". Accordingly, shutters have been lowered on 17.07.2014.

(B) NOTIFICATION OF THE FINAL ORDER OF THE CAUVERY TRIBUNAL

Due to the persistent efforts of the **Hon'ble Chief Minister**, and based on the direction of the Supreme Court of India on a Petition filed by the Government of Tamil Nadu, the Government of India notified the final order of the Cauvery Water Disputes Tribunal in its Gazette dated 19.02.2013. **This is a historic achievement.** Consequent to the publication of the Order, the constitution of Cauvery Management Board and the Cauvery Water Regulation Committee become necessary to implement the Order. As per the guidance of the **Hon'ble Chief Minister**, the following efforts have been taken in this regard.

- **The Hon'ble Chief Minister** presented a Memorandum to the then Hon'ble Prime Minister on 14.06.2011 to instruct the Ministry of Water Resources to take immediate steps to notify the Final Award dated 05.02.2007 of the

Cauvery Water Disputes Tribunal in the Gazette of India, and to place in position "the Cauvery Management Board" for the implementation of the Award of the Tribunal in letter and spirit.

- Again on 17.10.2011, the **Hon'ble Chief Minister** wrote to the then Hon'ble Prime Minister, reiterating that, pending disposal of Special Leave Petitions in the Supreme Court and the clarification petition filed before the Cauvery Water Disputes Tribunal under section 5(3) of the Inter State Water Disputes Act, 1956, the Final Award of the Tribunal should be published in the Official Gazette of Government of India, as in the case of publication of the Interim Order on 10.12.1991, with respect to the opinion rendered by the Supreme Court on 22.11.1991 in the Presidential reference.

- As per the order of the **Hon'ble Chief Minister**, Government of Tamil Nadu filed an Interlocutory Application (I.A.) in the Supreme

Court of India on 17.04.2012 for the notification of the final order of the Cauvery Water Disputes Tribunal and Constitution of the Cauvery Management Board.

- On the I.A. filed by Tamil Nadu for release of water by Karnataka during the year 2012-2013, the Supreme Court in its Order dated 04.02.2013, directed the Central Government to publish the Final Order dated February 5, 2007 awarded by the Cauvery Water Disputes Tribunal, in the Official Gazette of Government of India as early as may be possible and in no case later than February 20, 2013. Pursuant to this, the Government of India notified the Final Order in the Gazette of India on 19.02.2013. Due to the tireless efforts of the **Hon'ble Chief Minister**, the award was notified which is an important historical achievement, after a prolonged struggle by Tamil Nadu for getting the rightful share of Cauvery water to the farmers of Cauvery Delta Region.

3.0. IRRIGATION INFRASTRUCTURE – ACHIEVEMENTS DURING THE LAST THREE YEARS.

Water and land are two vital resources endowed by the nature. It is essential to manage these resources in a scientific manner, keeping in view the traditional practices. The water requirement of various sectors is continuously increasing and the land use pattern is also changing rapidly. Therefore, it is imperative to increase the water use efficiency and improve the irrigated agriculture service delivery to ensure sufficient food production and overall development.

During the past three years, the Water Resources Department has improved many irrigation infrastructure facilities and has implemented many development schemes. In addition, the Dam Rehabilitation and Improvement Project (DRIP), Flood Mitigation Schemes, Coastal Protection Schemes, Ground water Artificial Recharge schemes and Climate Adaptation programme in the Cauvery Delta are under implementation.

These works are being implemented with the State Funds, Centre-State shared schemes, Grants-in-aid of the 13th Finance Commission, NABARD, World Bank and Asian Development Bank (ADB) loan assistance.

Details of the completed and ongoing works

Augmenting the capacity of Water Resources and Formation of New Reservoirs

Formation of 3 New Reservoirs in the districts of Tiruvallur, Perambalur and Thoothukudi at an estimated cost of Rs.458.07 crore is in progress as detailed below:

(a) Hon'ble Chief Minister ordered for formation of a new reservoir at Kannankottai Village, Tiruvallur District, by linking two tanks viz., Kannankottai Hissa Rajaneri tank and Thervaikandigai tank. This will be the first reservoir to be constructed since independence, for the needs of Chennai City Water Supply.

Formation of this Reservoir at an estimated cost of Rs.330 crore is under implementation, which will store 1 TMC.ft. of water in 2 fillings.

Salient Features of this scheme:

- Forming a new Reservoir by linking the Kannankottai and Thervaikandigai Big tanks by forming an earthern bund to a length of 7.15 Km.

- Forming off-take canal to a length of 8300m from Kandaleru - Poondi canal at LS 2200m to store water.

- Providing irrigation facilities by forming 5 sluices.

- 1485.16 acre of lands are required for this scheme which includes 800.65 acre Patta lands, 629.92 acre of Poramboke lands and 54.59 acre of Reserve Forest lands.

- Excavation of off take canal, formation of new bund and

masonry works like inlet, regulator, bridges etc., are in progress.

(b) Reservoir across Marudaiyar river near Kottarai Village in Kunnam Taluk of Perambalur District

The Marudaiyar Reservoir scheme is proposed at a cost of Rs.108 crore across River Marudaiyar with a capacity of 211.58 M.Cft. and an annual storage of 423.16 M.Cft. in two fillings. By implementing this scheme, a total new dry extent of 4194 acre land will be brought under cultivation.

For implementing this scheme, an extent of 790.18 acre of Patta dry lands and 170.76 acre of Poramboke lands are to be acquired. Sanction has been accorded for an amount of Rs.23.27 crore towards conducting survey, detailed investigation and for land acquisition.

(c) **Upgradation of Peikulam, Pettaikulam and Korampallam tank** into Reservoir in Thoothukudi District at a cost of Rs.20.07 crore as announced by **the Hon'ble Chief Minister,** during the Collectors' Conference – 2011, is in progress. By implementation of this scheme, an ayacut of 5927 acre will be benefited.

3.1. New Anicuts

3 new anicuts constructed in the districts of Tiruvannamalai and Pudukottai at an estimated cost of Rs.5.50 crore to irrigate an extent of 1835.97 acre of ayacut as detailed below;

- Construction of anicut across Kamandalanaganathi River near Sevur Village to feed Irumbedu and Paiyur tanks of Arni Taluk in Thiruvannamalai District at an estimated cost of Rs.2.00 crore was completed. This scheme benefits an ayacut of 867.34 acre and also facilitates recharge of the wells in

and around of Arni Town, Sevur and nearby Villages.

- Construction of anicut across Vellar River in Thandalai Village to feed Mumbalai and Vadakku Manamelkudi tanks of Manamelkudi Taluk in Pudukottai District at an estimated cost of Rs.2.50 crore was completed benefiting an ayacut of 380.53 acre.

- Construction of anicut across Mudiyanar to feed Athani tank in Athani Village of Aranthangi Taluk in Pudukottai District was completed at a cost of Rs.1 crore. Irrigation to an extent of 588.10 acre is ensured by this scheme.

3.2. Inter-Linking of Rivers in the State

Under the scheme of interlinking of rivers within the State, one scheme in Karur District has been completed at an estimated cost of Rs. 234 crore. Another scheme is in progress in the Districts of Tirunelveli and Thoothukudi at an

estimated cost of Rs.369 crore. The details of these schemes are as under:

Construction of Barrage across River Cauvery at 250m Downstream of the Existing Kattalai Bed Regulator in Mayanur Village of Krishnarayapuram Taluk in Karur District

A new barrage has been constructed across Cauvery River at 250 m downstream of existing Kattalai bed regulator at Mayanur Village in Krishnarayapuram Taluk of Karur District at an estimated cost of Rs.234 crore. The total length of the barrage is 1230 m with a storage depth of 4.90 m. It has 86 Numbers of vents and 12 scour vents capable of discharging 4,63,000 cusecs.

Works to a value of Rs.132.14 crore were carried out during the last three years alone.

Benefits

- Improvement and better water regulation to the 4 off-take canals namely South Bank canal, Kattalai High Level canal, New Kattalai High Level canal, North Bank canal have been ensured benefiting an ayacut of 1,01,312 acres. Besides, well irrigation is developed by recharging.

- Storage of water up to 1.05 TMC ft will enable to recharge ground water for utilisation during non-irrigation period.

- This scheme would facilitate diversion of about 5.40 TMC ft of surplus water of Cauvery through the proposed link canal for inter linking the Rivers in State viz. Agniyaru, South Vellar, Manimuthar, Vaigai and Gundar.

- The Two Lane Bridge which is an allied structure of the Barrage has reduced a considerable

travel distance of about 45 km between the Villages situated in the Left and Right flanks of the river.

Link of Tamiraparani, Karumeniyar and Nambiyar Rivers

- Formation of a Flood Carrier Canal from the Kannadian Channel to drought prone areas of Sathankulam and Thisaiyanvilai by interlinking Tamiraparani, Karumeniyar and Nambiyar Rivers in Tirunelveli and Thoothukudi Districts is in progress. The scheme envisages improvement to the Kannadian Anicut, widening and improving the existing Kannadian Channel for a length of 6.5 km and excavation of a Flood Carrier Canal for a length of 73 km. Further, the tributaries of Tamiraparani River namely Pachaiyar and Kodumudiyar are proposed to be linked.

- By implementing this Scheme, an extent of 56,931.84 acre of land will be benefited including 42,012.86 acre of new ayacut. The ground water level in the nearby wells will also be increased.

The Project was sanctioned at an estimated cost of Rs.369 crore for implementation in 4 stages. Works in stages I and II are in progress. Orders have been issued for Land acquisition works for stages III and IV. Vide G.O. (Ms) No.3, Public Works (I.Spl.2) Department, dated: 03.01.2014. Out of a total expenditure of Rs.201.67 crore for Phase I and II, expenditure during 2011-14 is Rs.102.96 crore.

3.3. Formation of New Tanks/Ponds

One new tank has been formed in Dharmapuri District at an estimated cost of Rs.14.15 crore. Further, two new tanks are being formed in the Districts of Perambalur and Dindigul at an estimated cost of Rs.25.97 crore.

The details of these works are furnished below:

- Formation of a new Tank across Kallar Odai near Viswakudi in Thondamanthurai Village in Vepanthattai Taluk of Perambalur District at an estimated cost of Rs.19 crore is in progress to benefit an ayacut of 859.91 acre. This scheme will also cater to an additional indirect well ayacut of 1151.49 acre by conjunctive use of ground water.

- Formation of New Tank across Mathalapallam River in Pennagaram Taluk of Dharmapuri District was completed at a project cost of Rs.14.15 crore to store 55.632 MCft of water. An ayacut of 700 acre under first crop and 400 acre under second crop, spread over the Villages of Ramakondahalli, Sunjalnatham and Nagamarai in Pennagaram Taluk of Dharmapuri District are being irrigated.

- Formation of a new tank across Nallathangal Odai near Kothayam Village in Oddanchatram Taluk of Dindigul District with a storage capacity of 36.10 Mcft**,** at an estimated cost of Rs.6.97 crore is in progress. This scheme will benefit a new ayacut of 808 acre. In addition, the Ground water level will increase in the wells situated in the area thereby ensuring irrigation and drinking water facilities.

3.4. Formation of new canals / supply channels

3 new canals have been formed in the Districts of Krishnagiri and Dharmapuri at an estimated cost of Rs.14.44 crore, assuring irrigation to an ayacut of 1875.98 acre.

Further, one new canal is being formed in Thoothukudi District at an estimated cost of Rs. 18 crore. By implementing this scheme, an ayacut of 4246.91 acre would be benefited.

The details of these schemes are furnished below:

- Formation of a new Flood carrier canal from Kanjampatti odai in Vilathikulam Taluk of Thoothukudi District to feed Sayalgudi and other tanks in Kamudhi and Kadaladi Taluks of Ramanathapuram District at an estimated cost of Rs.18 crore is in progress. This scheme will benefit an ayacut of 4246.91 acre under 43 tanks.

- Excavation of Supply Channel from Baleguli tank to feed 28 tanks in Pochampalli Taluk of Krishnagiri District at an estimated cost of Rs.6.50 crore was completed. By this scheme, an ayacut of 854.98 acre is stabilised.

- Excavation of supply channel from Viruppampatti tank to Balethottam tank and four other tanks and one pond in Pochampalli Taluk of Krishnagiri District was completed at a cost of Rs.1.75 crore. In this

scheme, a supply canal was excavated from Viruppampatti tank for diversion and utilization of the flood surplus of River Pennaiyar to feed Balethottam, Moonkan, Odukallanur, Thippampatti and Kuttur tanks and one pond in Pochampalli Taluk. An ayacut of 207 acre of land is benefited in Barandapalli, Ayalampatti, Karadanoor, Odukallanur, Thippamptti and Balethottam Villages in Pochampalli Taluk of Krishnagiri District.

- Excavation of supply channel from Jerthalav channel to feed Totlampatti tank, Papparapatti tank and 15 other tanks in Palacode and Pennagaram Taluks of Dharmapuri District at an estimated cost of Rs.6.29 crore was completed. This scheme diverts the flood water from Chinnar dam to the existing Jerthalav canal assuring irrigation to an ayacut of 814 acre.

3.5. Formation of New Check dams/Bed dams/Grade walls

9 check dams and 2 grade walls have been constructed in the Districts of Tiruchirapalli, Coimbatore, Erode, Tirunelveli and Namakkal at an estimated cost of Rs.39.40 crore. In addition, 3 Bed dams have been constructed in the Districts of Ramanathapuram, Sivagangai and Cuddalore at an estimated cost of Rs.32.55 crore, stabilising an ayacut of 17510 acre. Further, one concrete protection wall at Mettur Dam in Salem District at an estimated cost of Rs.0.60 crore and construction of 10 new irrigation infrastructure facilities at an estimated cost of Rs.5.26 crore have been completed in the Districts of Coimbatore, Madurai, Salem, Thanjavur and Villupuram.

Construction of 24 check dams and 11 grade walls in 14 Districts at an estimated cost of Rs.228.47 crore is in progress. By implementing these

works, an ayacut of 41,384 acre will be benefited. Further, 5 bed dams at an estimated cost of Rs. 94.06 crore to benefit an ayacut of 36,200 acre and construction of 57 ground water recharge shafts at an estimated cost of Rs.24.82 crore are under implementation in Ramanathapuram and Sivagangai Districts.

The details of these works are given below:

- Construction of Check dam across Kosasthalaiyar at Thirukkandalam Village of Tiruvallur District at an estimated cost of Rs.35 crore is in progress. 90% of works have been completed. This scheme is implemented as a part of the infrastructural development to fulfil the Chennai City drinking water supply. By augmenting 160 MCft of water storage in this check dam would help to replenish and recharge the ground water.

- Check Dam across Cauvery River near Mutharasanallur at Kambarasampettai Village, in Srirangam Taluk of Tiruchirappalli District at an estimated cost of Rs.32 crore is completed. This scheme, announced by the **Hon'ble Chief Minister,** has been implemented with the objective of catering to the Tiruchirapalli City drinking water supply scheme and other major drinking water supply schemes even during summer season by augmenting the ground water potential. Besides, it is benefiting an area of 4 km radius from the checkdam by recharging the ground water level.

- Construction of 11 Grade Walls and 14 Check Dams across various tributaries of Cauvery river and Drainages in Thanjavur District was sanctioned at an estimated cost of Rs.67.68 crore. Out of 11 grade walls, 1 grade wall work is completed and the remaining works are in progress. This scheme enables to restore the theoretical

bed level of rivers at various locations by construction of grade walls and recharge the ground water by constructing the check dams in order to provide effective irrigation in and around Thanjavur District. By implementing this project, an ayacut of 41,384 acre will be benefited.

- Construction of Bed dam across Vaigai River near Valasai Village to feed lower Nattarkal and 16 tanks in Ramanathapuram District, sanctioned at an estimated cost of Rs.19.86 crore is in progress. This scheme will help to divert the flood flows and normal flows in the Vaigai river to the lower Nattarkal flood carrier effectively. An ayacut of 8369 acre would be benefited.

- Construction of Bed dam across Vaigai River near Kamuthagudi Village to feed 36 tanks through Koothangal supply channel in Ramanathapuram District, sanctioned at an estimated cost of

Rs 19.70 crore, is in progress. An ayacut of 5,333 acre under 36 tanks fed by the Koothankal supply channel off taking from Vaigai river and 14,787 acre under 21 tanks fed by the left main canal off taking from Parthibanur regulator would be benefited.

- Construction of Checkdam across Vaigai River near Kunnappanendal Village below Parthibanur Regulator in Ramanathapuram District, sanctioned at an estimated cost of Rs.19.50 crore, is in progress. By implementing this scheme, an ayacut of 13,614 acre will be benefited. In addition, the ground water level and the quality of water will be improved.

- Construction of Bed dam across Vaigai river near Thelichathanallur Village to feed 14 tanks in Ramanathapuram District, sanctioned at an estimated cost of Rs.19 crore, is in progress. By implementing this scheme an extent of 6,920 acre under 37 tanks

of left main canal of Parthibanur regulator and upper Nattarkal channel will be benefited.

- Bed Dam across Vaigai river near Manthivalasai to feed Kalari Channel and right main canal feeding tanks in Ramanathapuram District is completed at an estimated cost of Rs.14.20 crore. An ayacut of 9,029 acre under 52 tanks fed by the Kalari branch channel and 3,181 acre under 16 tanks fed by right main canal below Pottithatti Village is benefited.

- Construction of bed dam across Vaigai River to feed Parthibanur big and small tanks, Vannikudi tank and other two tanks at Athanur Village in Manamadurai Taluk of Sivagangai District, sanctioned at an estimated cost of Rs. 16 crore, is completed. By construction of this bed dam, an ayacut of 1,964 acre has been benefited.

- Construction of bed dam across Vaigai River to feed Maranadu Tank and other nine tanks at Ladanendal Village in Manamadurai Taluk of Sivagangai District, at an estimated cost of Rs.12.85 crore, is completed. By this scheme, the water flow can be diverted to the existing right main canal from the existing off-take from Vaigai River to benefit an ayacut of 5,300 acre.

- Construction of a Bed Dam across Periya Odai in Cuddalore District at an estimated cost of Rs.5.50 crore across Manimuktha river to mitigate flood in Virudhachalam Taluk is completed. This scheme provides supply of water into the south main canal for extension of irrigation and also to discharge 15,000 cusecs of flood water.

- RCC skin wall from Ellis saddle to 109m in the left flank of Stanley reservoir at Mettur Dam in Salem District is completed at an estimated cost of Rs.60 lakh. By

this scheme, leakage of water has been arrested.

- In order to increase the ground water and improve the quality of water for drinking water purpose and for ground water irrigation, construction of 38 check dams under Tamil Nadu IAMWARM Project in the Districts of Tiruvallur, Kancheepuram, Tiruvannamalai, Dharmapuri, Krishnagiri, Cuddalore, Sivagangai, Theni, Thoothukudi, Tirunelveli, Tiruppur, Karur and Dindigul at a total estimated cost of Rs.125.79 crore are in progress. It is planned to complete the works by August 2014.

- In order to augment the ground water, construction of 57 numbers of artificial recharge wells in the bed of 54 tanks which were rehabilitated under the Tamil Nadu IAMWARM Project at an estimated cost of Rs.24.82 crore is in progress. The works are planned to be completed by August 2014.

- 8 check dams at an estimated cost of Rs. 3.71 crore and 2 grade wall at an estimated cost of Rs.3.69 crore have been constructed in Coimbatore, Erode, Tirunelveli, Tiruchirapalli and Namakkal Districts under National Agriculture Development Programme, to enhance the water availbility. In addition to this, rehabilitation and modernisation of 10 irrigation infrastructure in tanks, canals, anicuts and ponds in Coimbatore, Madurai, Salem, Thanjavur and Villupuram Districts have been carried out at an estimated cost of Rs.5.26 crore.

3.6. ARTIFICIAL RECHARGE STRUCTURES

It is essential to store, recharge and replenish the ground water by constructing the recharge structures. Ground water is being tapped for irrigated agriculture, drinking water and industrial purposes. The Master Plan Artificial Recharge Scheme is under implementation at an estimated cost of Rs.550 crore to replenish

this resource in a systematic manner. In this scheme, Check dams and recharge shafts are being constructed by the Water Resources Department in the rivers. Small Check dams across streams, nullahs and percolation ponds are being constructed by the line departments viz., Tamil Nadu Water Supply and Drainage Board, Agricultural Engineering Department and Forest Department.

During the past three years, the Water Resources Department has constructed 209 check dams, 2 diaphragm walls, 5 grade walls, 29 percolation ponds, 1 bed dam and 6 sub-surface dykes across the rivers at an estimated cost of Rs.157.33 crore covering 28 Districts of the State viz., Ariyalur, Coimbatore, Cuddalore, Dharmapuri, Dindigul, Erode, Karur, Krishnagiri, Madurai, Nagapattinam, Namakkal, The Nilgiris, Perambalur, Pudukottai, Salem, Sivagangai, Thanjavur, Theni, Thoothukudi, Tirunelveli, Tiruppur, Tiruvallur, Tiruvannamalai, Tiruvarur,

Tiruchirapalli, Vellore, Villupuram and Virudhunagar. In addition, 266 Recharge Shafts at an estimated cost of Rs.5.66 crore have been installed in the river beds of the Districts of Dharmapuri, Krishnagiri, Sivagangai, Tiruvarur and Thanjavur. The ground water quality and levels in the vicinity of the constructed structures are being continuously monitored by taking measurements from the designated gauge wells. **There has been remarkable raise in the ground water level of the surrounding area by 1.7 m to 4.5 m, which has improved the agricultural production and ground water quality.**

The details of the structures constructed during the last 3 years are:

(Rs.in crore)

Sl. No.	**Type of structure**	**Nos.**	**Cost**
1	Checkdam	209	122.06
2	Diaphragm wall	2	6.45
3	Gradewall	5	3.98
4	Percolation Pond	29	12.06
5	Bed dam	1	7.50
6	Recharge Shaft	266	5.66
7	Sub- surface Dyke	6	5.28
	Total	**518**	**162.99**

District-wise details of Check dams

(Rs.in crore)

Sl. No.	District	Check dams	
		Nos.	Estimate
1	Ariyalur	10	2.82
2	Coimbatore	12	3.48
3	Cuddalore	5	1.73
4	Dharmapuri	6	2.40
5	Dindigul	19	5.18
6	Erode	12	5.25
7	Karur	3	0.96
8	Krishnagiri	3	2.04
9	Madurai	8	1.29
10	Nagapattinam	1	0.50
11	Namakkal	8	1.79
12	The Nilgiris	1	0.59
13	Perambalur	3	0.60
14	Pudukottai	6	1.02
15	Salem	9	2.35
16	Sivagangai	8	3.40
17	Thanjavur	6	3.64
18	Theni	9	4.26
19	Thoothukudi	13	16.28
20	Tirunelveli	21	8.77
21	Tiruppur	4	0.88
22	Tiruvallur	6	29.01
23	Tiruvannamalai	4	0.94

24	Tiruvarur	4	1.68
25	Tiruchirapalli	4	0.83
26	Vellore	2	1.19
27	Villupuram	8	5.31
28	Virudhunagar	14	13.85
	Total	**209**	**122.06**

Recharge Shafts

During the Collectors' Conference 2012, the **Hon'ble Chief Minister** announced that Recharge Shafts will be constructed at an estimated cost of Rs.20 crore in Tiruvarur District. Accordingly, 1335 numbers of Artificial Recharge Shafts in Cauvery and Vennar sub-basins of Tiruvarur District have been constructed.

3.7. DAM REHABILITATION AND IMPROVEMENT PROJECT (DRIP)

The Dam Rehabilitation and Improvement Project is under implementation with World Bank Assistance in order to ensure the strength, safety and the operational

performance of the existing dams. Under this scheme, 111 dams are proposed to be rehabilitated in Tamil Nadu through Water Resources Department (WRD), Tamil Nadu Generation and Distribution Corporation Ltd. (TANGEDCO) and Agricultural Engineering Department (AED).

This includes 73 Water Resources Department dams and 38 Tamil Nadu Generation and Distribution Corporation Ltd dams.

In addition, catchment area treatment works are taken up by the Agricultural Engineering Department in two reservoirs, viz., Krishnagiri and Kundah reservoirs.

The total cost of the Project is Rs.745.49 crore. The Project is under implementation since 18.04.2012.

Department-wise cost Distribution

Sl. No.	Department	US $ in million	Rs. in crore
a.	Water Resources	97.91	469.94
b.	Agricultural Engineering	3.21	15.41
c.	Tamil Nadu Generation and Distribution Corporation Ltd. (TANGEDCO)	54.19	260.14
	Total	**155.31**	**745.49**

Present status of Phase-I dams

Rehabilitation works are proposed to be taken up in 11 dams, out of which works in 9 dams have been commenced. Works in the remaining 2 dams namely Manimuthar and Kodaganar will commence shortly.

1	Adavinainarkoil	6	Mordhana
2	Vadakkupachaiyar	7	Gomukhinadhi
3	Kodumudiyar	8	Siddhamalli
4	Nambiyar	9	Vidur
5	Poigaiyar		

3.8. Rehabilitation of Anicuts

339 Anicuts have been rehabilitated in Tiruvallur, Kancheepuram, Cuddalore, Dharmapuri, Thanjavur, Karur and Tiruppur Districts at an estimated cost of Rs.181.27 crore, benefiting an ayacut of 27,837 acre. In addition, rehabilitation works in 68 anicuts are in progress.

The details of these works are as under:

- Rehabilitation of 16 Old Anicuts in Amaravathy River System in Karur and Tiruppur Districts at an estimated cost of Rs.18 crore is completed thereby stabilising an ayacut of 15,208 acre.

- Extension and Rehabilitation of Virudhachalam Anicut across Manimuktha River in Virudhachalam Taluk of Cuddalore District is completed at an estimated cost of Rs.13 crore benifiting an ayacut of 9,417 acre through 14 tanks in

Virudhachalam and Chidambaram Taluks.

- Rehabilitation and Gunitting the South Branch and North Branch vents of Lower anicut in Thanjavur District is completed at an estimated cost of Rs.6.21 crore for arresting the leakage of water and improving water management.

- Reconstruction of Neenjal Maduvu anicut across Palar river to feed a chain of 15 tanks and a major tank of Ponvilainthakalathur in Chengalpattu Taluk of Kancheepuram District is completed at an estimated cost of Rs.9 crore thereby benefiting an ayacut of 5202 acre.

- Rehabilitation of Sempoondi anicut at Kiliayanallur Village of Madurantakam Taluk of Kancheepuram District is completed at an estimated cost of Rs.2.20 crore to benefit an ayacut of 1,292 acre. Besides irrigation, ground water is recharged in and around the anicut.

- Reconstruction of Mylapudur anicut across Nambiyar River in Anaikulam Village of Radhapuram Taluk in Tirunelveli District is completed at an estimated cost of Rs.8crore benefiting an ayacut of 623 acre.

- Rehabilitation and improvement 16 Anicuts in Kallar River of Vaniar Minor Basin in Dharmapuri District at an estimated cost of Rs.2.15 crore is completed. In this scheme foot path crossing, road culverts, desilting work, skin wall provision and new head sluice with shutter arrangements are completed thereby benefiting an ayacut of 1297 acre.

- Under Tamil Nadu IAMWARM Project, out of 370 anicuts taken up for rehabilitation in 61 sub basins, at an estimated cost of Rs.122.71 crore, works in 302 anicuts are completed. The balance works are planned to be completed by August 2014.

3.9. Renovation of Tanks

Renovation works in 4 tanks at an estimated cost of Rs.130 crore are under implementation to fulfil the Chennai City drinking water supply. Tanks are being rehabilitated under various schemes, to assure irrigation to the designated ayacut. During the past three years, 3350 tanks were taken up for rehabilitation at an estimated cost of Rs.885.22 crore. Works have been completed in 2877 tanks and works in 473 tanks are in progress.

The details of these works are furnished below:

As ordered by **the Hon'ble Chief Minister**, restoration works are under implementation in the drinking water supply tanks, viz., Cholavaram, Nemam, Porur and Ayanambakkam to fulfil the drinking water needs of Chennai city. Restoring the full capacity of tanks, creating additional storage, strengthening and standardizing these tanks are the main objectives of this scheme.

The details of these works are as under:

(Rs. in crore)

Sl. No.	Work	Capacity of tanks (in Mcft)	Addl. Capacity (in MCft)	Cost	Status
1	Chola varam	881	200	0.50	Works Completed
2	Nemam	257	320	79.50	13% works completed
3	Porur	46	24	20.00	60% works completed
4	Ayanam bakkam	290	24	30.00	85% works completed
	Total	**1474**	**568**	**130.00**	

Restoration of Traditional Water Bodies

- The 13th Finance Commission recommended a grant of Rs.200 crore for Restoration of Traditional Water Bodies over a period of 4 years in 4 Phases from 2011-12 to 2014-15. Under this Scheme, Government accorded sanction to restore 674 Traditional Water Bodies in 23 Districts, on priority basis.

- Under this scheme, strengthening of tank bund, as per standards, desilting, strengthening of supply channel to receive full supply from streams and catchment, strengthening of sluices and surplus arrangements are carried out.

- During the financial year 2011-12, 2012-13 and 2013-14 Restoration of 525 tanks have been taken up at a cost of Rs.149.70 crore. So far, restoration works for 333 tanks have been completed, 176 tanks

are being restored and restoration of 16 tanks will be taken up.

Districtwise Traditional water bodies Restored / in progress in the last 3 years

(Rs. in crore)

Sl. No	District	Restored works		Restoration in progress	
		No. of Tanks	Estimate	No. of Tanks	Estimate
1	Ariyalur	-	-	1	0.59
2	Coimbatore	3	0.58	-	-
3	Cuddalore	12	2.56	8	2.22
4	Dharmapuri	1	0.23	4	0.84
5	Dindigul	6	1.97	-	-
6	Erode	6	1.32	-	-
7	Kanchee Puram	7	2.38	15	4.78
8	Krishnagiri	8	1.64	11	3.28
9	Madurai	54	19.40	7	2.13
10	Namakkal	15	4.32	-	-
11	Pudukottai	5	0.69	1	0.36
12	Ramanatha puram	38	9.27	7	1.74
13	Salem	20	6.71	-	-
14	Sivagangai	33	7.08	2	0.74

15	Theni	8	2.03	1	0.35
16	Tiruvallur	19	7.29	12	2.64
17	Tiruvanna malai	1	0.29	1	0.16
18	Thoothukudi	7	2.84	1	1.78
19	Tiruchirapalli	34	13.30	5	1.93
20	Thanjavur	-	-	48	12.28
21	Vellore	24	5.36	13	2.30
22	Villupuram	25	6.30	35	8.61
23	Virudhunagar	7	1.08	4	1.10
	Total	**333**	**96.64**	**176**	**47.83**

Districtwise Works to be taken up under Phase II and III (2012-13 and 2013-14)

(Rs. in crore)

Sl. No.	District	Number of Tanks	Estimate Amount
1	Kancheepuram	1	0.18
2	Madurai	1	0.19
3	Ramanathapuram	3	0.55
4	Thoothukudi	5	2.21
5	Tiruvallur	1	0.32
6	Vellore	1	0.15
7	Villupuram	4	1.88
	Total	**16**	**5.48**

Benefits Accrued :

After completion of the restoration works in tanks, ayacut gap has been stabilised, the food production increased and the ground water status also improved.

- **Restoration of Ooty lake at a cost of Rs.2.25 crore is completed.** The Kodappamund channel is the main source for Ooty Lake, and originates from the deeply rising hills of Kodappamund hamlet near Ooty. Cleaning and desilting works for Kodappamund channel for an amount of Rs. 1.2 crore and Bio-remediation of Ooty lake for an amount of Rs.0.05 crore are carried out and a new Sewage Treatment Plant for an amount of Rs. 1 crore has been constructed.

- **Rehabilitation of South Main Channel and its system tanks of Srivaikuntam anicut in Thoothukudi District is completed at an estimated cost**

of Rs.10 crore. By implementing this scheme, wastage of water from the tanks and channels due to seepage has been prevented thereby benefiting an ayacut of 12,760 acre.

- **Modernisation of Ramanathapuram Big Tank** in Ramanathapuram District is completed at an estimated cost of Rs.9.73 crore. By implementing this scheme efficiency of the system has been improved thereby stabilising an ayacut of 3963 acre.

- **Permanent restoration of breached Thali Big tank in Krishnagiri District** at an estimated cost of Rs.2.30 crore is completed. By this scheme, the bund and the surplus course have been modernised and a new weir has been constructed benefiting an ayacut of 109 acre.

- **Rehabilitation of Singaneri tank in Kannanthankudy Melaiyur Village in Orathanadu Taluk of**

Thanjavur District is completed at an estimated cost of Rs.75 lakh. The damaged Singaneri Tank bund, sluices and surplus arrangements were rehabilitated by this scheme thus benefiting an ayacut of 190 acre.

- **Under Tamil Nadu IAMWARM Project, rehabilitation of 2831 tanks in 61 sub basins in 26 Districts were taken up at a cost of Rs.699.99 crore**, of which works have been completed in 2541 tanks. The balance works are planned to be completed by August 2014.

Benefits of the project:

1) Increase in area cultivated
2) Increase in storage capacity
3) Increase in conveyance efficiency

Increase in area cultivated

Survey has been undertaken to assess the benefit of the project

with respect to the extent of area cultivated and gap in cultivation before and after implementation of the project.

From a survey conducted in 19 number of sample tanks in 3 selected sub basins of Arjunanadhi, Manimuthar, Kottakaraiyar it has been ascertained that there is an increase of about 40% in the area cultivated. The total extent of gap in cultivation prior to implementation of the project in the selected tanks is 1608 acre which has been reduced by 865 acre (46%) and 743 acre is brought under cultivation. This is attributed to the integrated approach adopted in the project.

3.10. Enhancing the storage capacity

From the survey of the sample tanks in the 3 selected sub basins of Arjunanadhi, Manimuthar and Kottakaraiyar it is assessed that there is an increase in the average storage capacity of the tanks by

4% to 7% after implementation of the project.

3.11. Increase in conveyance efficiency

Gauge measurements have been conducted in the lined canal in Parambikulam Aliyar Project and the conveyance efficiency of lined canal is observed to be 97% as against the pre-project efficiency of about 60%.

3.12. Rehabilitation of Regulators

5 Regulators in the Districts of Tiruchirappalli, Madurai, Dindigul and Erode have been rehabilitated at an estimated cost of Rs.16.40 crore, benefiting an ayacut of 2,53,393 acre.
3 Regulators in the Districts of Cuddalore and Dindigul at an estimated cost of Rs.42.70 crore are being rehabilitated, which would benefit an ayacut of 52,944 acre.

Details of these works are as under:

- Rehabilitation of Sethiathope (Regulator) Anicut in Cuddalore District, sanctioned at an estimated cost of Rs.23.65 crore, is in progress. In this scheme, the anicut sluices and shutters are rehabilitated thereby benefiting an ayacut of 40,700 acre.

- Rehabilitation of Pelandurai Regulator across Vellar River in Thittakudy Taluk of Cuddalore District, at an estimated cost of Rs 17.50 crore, is in progress. The scheme would assure irrigation to an ayacut of 12,244 acre through 18 tanks.

- Rehabilitation of damaged shutter of Upper Anicut Barrage across Cauvery river in Elamanur Village of Srirangam Taluk in Tiruchirappalli District is completed at an estimated cost of Rs.4.50 crore. This has facilitated efficient regulation of water.

- Rehabilitation of Regulator for Kondamvari Drain at mile 97/0 in the left bank of Aganda Cauvery in Manamedu Village, Thottiyam Taluk of Tiruchirappalli District is completed at an estimated cost of Rs.90 lakh assuring irrigation to an ayacut of 4964 acre.

- Reconstruction of collapsed downstream talus apron and renewing and repairing the worn out steel shutters in the Virahanur regulator across Vaigai River in Madurai District is completed at an estimated cost of Rs.5 crore, assuring irrigation to an ayacut of 41,429 acre.

- Special repairs to corroded shutter arrangements in the Peranai Regulator and Renewal and Replacement of vertical gear shutters in Periyar main canal head sluice in Nilakottai Taluk of Dindigul District at an estimated cost of Rs.3 crore is completed.

- Providing screw gearing shutters to all Sluices in the Lower Bhavani Project Main Canal from mile 0/0 to mile 124/2-560 in Erode and Karur Districts at an estimated cost of Rs.3 crore is completed assuring irrigation to an ayacut of 2,07,000 acre.

- Repairs to sluice and renewal of sluice shutters is in progress under Tamil Nadu IAMWARM Project in the irrigation systems of Palar-Porundalar, Vardhamanadhi, Kuthiraiyar and Santhanavarthini in Dindigul District at an estimated cost of Rs.1.55 crore.

3.13. Rehabilitation of canals and supply channels

Canals and Channels in 26 Districts have been rehabilitated at an estimated cost Rs.337.74 crore benefiting an ayacut of 79,447 acre.

Rehabilitation works in the Canals and Channels of 5 Districts are in

progress at an estimated cost of Rs.271.22 crore benefitting an ayacut of 4,70,639 acre.

The details of these works are given below:

- Rehabilitation of Contour Canal from LS 0.00 km to LS 49.30 km in Tiruppur and Coimbatore Districts at an estimated cost of Rs.184.50 crore is in progress. Due to the age and continuous function for over 50 years and its geographical location, the canal has subjected to various deteriorations and lost its structural stability and water conveyance efficiency. The rehabilitation measures presently taken up and implemented during the limited closure period available in a year would assure irrigation to an ayacut of about 4,25,012 acre in Coimbatore and Tiruppur Districts.

- Rehabilitation of Kalingarayan channel from mile 3/3 to 9/7 in Erode Taluk and District is completed at an estimated cost of

Rs.50 crore. The Kalingarayan channel takes off from the 700 years old Kalingarayan Anicut and irrigates about 15,750 acre of land in Erode Taluk and District. Effluents of tanneries, dyeing and textile industries and also the domestic sewage let out by Erode Corporation had been polluting the Kalingarayan channel at the stretch from mile 3/3 to 9/7. Construction of retaining wall on the left and right side of channel mitigated the pollution problems.

- Rehabilitation of Kalingarayan channel from mile 0/0-000 to 3/3-000 in Erode Taluk and District, sanctioned at an estimated cost of Rs.41 crore, is in progress. The reconstruction works of existing damaged bridges, sluices, under tunnels are completed. An ayacut of 15,750 acre will be stabilised.

- Rehabilitation of Arakkankottai and Thadapalli Channels in Gobichettipalayam Taluk of Erode District, at an estimated cost of

Rs.17.45 crore, is completed thereby benefiting an ayacut of 24,505 acre under the age old Kodiveri Anicut system of Bhavani basin.

- Improvements to Panangudi and Kuyavan channels off taking from Malattar River of Lalgudi Taluk in Tiruchirappalli District, is completed at an estimated cost of Rs.3 crore, thereby benefiting an ayacut of 1107 acre.

- Protecting the vulnerable portions with Protection Wall and Concrete Slab in Left Bank of Cauvery River from mile 119/0 to 123/2 (Srirangam Nattu Vaikkal Head Sluice to Amma Mandapam) in Srirangam Taluk of Tiruchirappalli District, at an estimated cost of Rs.1.60 crore is completed. The Srirangam Town in Tiruchirappalli District has been protected from floods.

- Modernisation of Vadavar Extension canal from RD 10/83 to 14/7055 in Tiruvarur District, at an estimated cost of Rs.23 crore, is in progress. By implementing this scheme, seepage loss of water will be prevented and the tail-end ayacut will get assured supply, right from the beginning of irrigation season.

- Modernisation of Thirumeni Eri and its feeder channel at Thirumakkottai Village in Mannargudi Taluk of Tiruvarur District is completed at an estimated cost of Rs.1.17 crore.

- Rehabilitation of Nilayur Channel for increasing the carrying capacity to feed extension channel in Madurai District is completed at an estimated cost of Rs.23.50 crore. By implementing this scheme 9,951 acre under 94 tanks (50 Tanks in Madurai District, 21 tanks in Virudhunagar District and 23 tanks in Sivagangai District) have benefited.

- Modernisation of 10th Branch Canal and construction of a Bye-pass Channel to feed Chunnambur Distributory and Modernisation of connected 12 Tanks in Madurai District, at an estimated cost of Rs.10 crore, is completed benefiting an ayacut of 12,388 acre.

- A new Trash Rack arrangement at about 130m upstream of the Tunnel Entry at the Thekkady Head Sluice in the Leading Channel of the Periyar Lake for maximum drawal of water from the Mullai Periyar Dam to the Vaigai dam at an estimated cost of Rs.59 lakh is completed. This has helped to overcome the difficulties and bottlenecks faced to clear the deposition of silt in the leading channel and facilitate the drawal of water from Periyar dam.

- Increasing the carrying capacity of Palayamparavoo channel and P.T. Rajan Channel in Cumbum valley of Theni District, at an estimated cost of Rs.10.08 crore is completed. This scheme increased the water carrying capacity of

Palayamparavoo channel from 90 cusecs to 150 cusecs and that of P.T.Rajan channel from 70 cusecs to 100 cusecs. An ayacut of 7,587 acre in Theni District has been benefited by this scheme.

- Modernisation of Melmangalam supply channel in Melmangalam Village in Periyakulam Taluk of Theni District, at an estimated cost of Rs.4 crore, is completed benefiting an ayacut of 932 acre.

- Modernisation of Jeyamangalam supply channel in Jeyamangalam Village in Periyakulam Taluk of Theni District, at an estimated cost of Rs.3.75 crore, is completed thereby benefiting an ayacut of 929 acre.

- Modernisation of right main canal in Manjalar dam of Devadanampatti Village in Periyakulam Taluk of Theni District, at an estimated cost of Rs.2.76 crore, is completed. This scheme has benefited an ayacut of 1873 acre.

- Restoration of Athoor anicut channel of Athoor Taluk in Dindigul District, at an estimated cost of Rs.8.5 crore, is completed. This scheme benefits an extent of 769 acre of single crop and 29 acre of double crop.

- Rehabilitation of Thovalai Channel including its Tanks in Kanniyakumari District, at an estimated cost of Rs.22.50 crore, is in progress. This scheme envisages rehabilitation of Thovalai Channel, its branch channels and irrigation tanks. The works have been splitup into 9 packages. Works in 7 Packages have been completed and are progressing in 2 Packages. A total of 29,877 acre ayacut will be benefited.

- Rehabilitation and improvements to Neikkarapatti Tank supply channel in Kondalampatti Village of Salem Taluk and District is completed at an estimated cost of Rs.2.70 crore benefiting an ayacut of 222 acre.

- The construction of well syphon across Palar river to connect the damaged aqueduct portion (Re-construction of syphon aqueduct) in Mordhana Right main canal near Chittathur Village in Gudiyatham Taluk of Vellore District, at an estimated cost of Rs 1.40 crore, is completed. By implementing this scheme an ayacut of 3405 acre under 7 tanks receives assured supply from the Mordhana Reservoir.

- Formation of a sub surface dyke using impervious soils (Clay etc.) across Vegavathi river near Mettukuppam Village in Kancheepuram Taluk and District, at a cost of Rs.22 lakh, is in progress.

- Rehabilitation of 4897 km length of supply channel in 61 sub basins in 26 districts were taken up under Tamil Nadu IAMWARM Project for a value of Rs.247.24 crore of which, works have been completed for a length of 4395 km. The balance

works are planned to be completed by August 2014.

3.14. Flood Protection works

Flood Protection Works in the Districts of Tiruchirappalli, Karur, Ariyalur and Madurai have been completed at an estimated cost of Rs.240.94 crore, benefitting an ayacut of 7492 acre.

The details of these works are as under:

- 23 Flood protection works to Cauvery and Kollidam river banks in Karur, Tiruchirappalli and Ariyalur Districts and particularly preventing inundation in Tiruchirappalli and Srirangam towns limits were completed at a cost of Rs.214.22 crore.
- Flood protection works for Kudamurutty river in Tiruchirappalli District is completed at an estimated cost of Rs. 16.72 crore. By implementing this scheme, the adjacent areas along the

Kudamurutty river bank have been relieved from inundation and damages during floods.

- Flood Protection Works to Kondamvari Odai and Rehabilitation of dilapidated Anicuts and damaged Tanks and Weirs in Madurai District were completed at an estimated cost of Rs.10 crore. This scheme ensures flood protection and also stabilises an ayacut of 7,492 acre.
- **Flood Management Programme**
  The Flood Management Programme is implemented in the State under the Eleventh Five Year Plan as a Centre-State Shared Scheme. The following Flood protection works are completed at an estimated cost of Rs.635.54 crore, out of which the works for a value of Rs.500 crore were undertaken in the year 2011-12.
- Under this scheme, Tiruvallur, Villupuram, Cuddalore, Thanjavur and Nagapattinam Districts are protected from the Flood damages.

(Rs. in crore)

S. No.	Name of the Scheme	Estimate
1.	Flood protection works to Araniar River at upstream and downstream of A.N.Kuppam Anicut and downstream of Lakshmipuram Anicut to Pulicat Creek in Tiruvallur District.	12.41
2.	Flood protection works to Panruti and Cuddalore Towns from Pennaiyar, Gadilam, Uppanar, Paravanar and South Malattar Rivers in Cuddalore District.	68.41
3.	Flood protection works to Vellar Basin in Cuddalore and Villupuram Districts.	164.32
4.	Flood protection works to Kollidam river in Thanjavur, Nagapattinam and Cuddalore Districts.	375.90
5.	Flood protection works to Kosasthalaiyar River from Napalayam to sea mouth in Tiruvallur District.	14.50
	Total	**635.54**

3.15. Jawaharlal Nehru National Urban Renewal Mission (JNNURM)

A Comprehensive Master Plan on improvements to micro drainages such as storm water drains are implemented by Corporation of Chennai and improvements to macro drainages like Buckingham canal, Otteri Nullah, Virugambakkam - Arumbakkam drain, Velachery - Veerangal Odai and Ambattur Tank surplus are implemented by Water Resources Department to mitigate flood damages in Chennai City during the monsoon period, with a Central - State share at a revised estimated cost of Rs.1404.66 crore. At present, improvements to macro drainages are implemented by Water Resources Department at a revised estimated cost of Rs.699.86 crore in 10 packages is in progress and scheduled to be completed in September 2014. Improvements to micro drainages are implemented by Corporation of Chennai at a revised cost of Rs.704.80 crore.

3.16. Coastal protection works

52 Coastal Protection Works at an estimated cost of Rs.229.80 crore were taken up in the 7 coastal Districts of Kanniyakumari, Thoothukudi, Tirunelveli, Nagappattinam, Tiruvallur, Villupuram and Cuddalore, out of which 28 works have been completed, 6 works are in progress and 18 works would be taken up early.

The details of these works are furnished below:

- Rehabilitation and raising the existing RMS wall to a height of 2m to avoid intrusion and erosion due to high sea waves from LS 13/100 to 18/640 km along coastal area from Nethaji Nagar to Nettukuppam in Madhavaram Taluk of Tiruvallur District, at an estimated cost of Rs.26.58 crore, is completed. This scheme prevents intrusion and erosion due to high sea waves.

- Construction of series of 10 numbers of Groynes from

Ennore to Ernavoorkuppam LS 19/000 to 15/200 km along coastal area in Madhavaram Taluk of Tiruvallur District was sanctioned at an estimated cost of Rs.31.82 crore. Action for obtaining clearance under Coastal Regulation Zone (CRZ) Notification 2011 is in process.

- Construction of Groyne at Enayamputhanthurai in Vilavancode Taluk of Kanniyakumari District is completed at an estimated cost of Rs.3.50 crore. The Groyne protects about 400 fishermen familes in the area from natural hazards during monsoon. It has also facilitated for safe boat landing and fishing besides protecting the coast line from erosion.

- The 13th Finance Commission recommended a grant of Rs.200 crore for Coastal protection works over a period of 4 years (III Phases) from 2011-2012 to 2014-2015. During the last three years, to protect the livelihood of people, land and properties of the Villagers and to achieve stability of

the coastal site, vulnerable reaches were identified on priority basis in 7 Districts to execute 49 coastal protection works at a cost of Rs.199.72 crore, out of which, 26 works were completed, 6 works are in progress and 17 works are to be taken up.

- Districtwise coastal protection works completed / in progress in the last 3 years.

(Rs. in crore)

Sl. No.	District	Completed works		In progress	
		No. of works	Estimate	No. of works	Estimate
1.	Kanniyakumari	14	14.69	1	2.09
2.	Nagapattinam	5	23.55	3	34.37
3.	Tiruvallur	3	3.29	-	-
4.	Thoothukudi and Tirunelveli	3	1.70	2	8.72
5.	Villupuram and Cuddalore	1	0.42	-	-
	Total	**26**	**43.65**	**6**	**45.18**

Districtwise Coastal Protection Works to be taken up

(Rs. in crore)

Sl. No.	District	No. of works	Estimate Amount
1	Cuddalore	4	9.08
2	Kanniyakumari	4	8.05
3	Thoothukudi	5	69.49
4	Villupuram	4	24.07
	Total	**17**	**110.69**

3.17. The Hon'ble Chief Minister ordered that development works at a cost of Rs.1560 crore for Climate Adaptation programme in Cauvery Delta would be implemented with the assistance of Asian Development Bank.

Tamil Nadu is largely dependent on monsoon rains and is prone to drought when the monsoon fails. The North East Monsoon brings erratic but intense rains which give rise to flood and drainage problems and climate change is expected to aggravate these problems.

By executing this scheme, protection of the coastal area in the Cauvery Delta will be ensured. The structures to be constructed would act as flood absorbers, facilitating effective use of flood water through recharging the ground water resources and preventing the saline water ingress into the fertile lands. This scheme will benefit an ayacut of about 4.50 lakh acre under Cauvery, Vennar, Grand Anicut Canal System and Lower Coleroon Anicut System covering the Districts of Tiruvarur, Nagapattinam and a part of Thanjavur.

During this year, it is proposed to take up works in the following 6 rivers / drains of the Vennar Sub Basin, as a first phase of the project:

a. Adappar
b. Harichandranadhi
c. Pandavayar
d. Vellaiyar
e. Valavanar Drain
f. Vedaraniyam Canal

3.18. Memorials and Building infrastructure

- Platinum Jubilee Memorial is constructed on the right flank of Mettur dam to commemorate the 75th year of Mettur dam, at an estimated cost of Rs. 1.05 crore. The memorial was inaugurated by the **Hon'ble Chief Minister** on 03.03.2012.

- Colonel J.Pennycuick Memorial at a cost of Rs.1.25 crore constructed on the orders of **Hon'ble Chief Minister**, was inaugurated on 15.01.2013.

- In the last three years, 63 schemes such as Construction of quarters, Office buildings, Renovation of inspection bungalows and Project houses have been completed at an estimated cost Rs.11.28 crore.

3.19. Formation of Roads and construction of Bridges

New bridges and roads have been constructed in the Districts of Tiruvallur, Trichirappalli, Thanjavur, Ariyalur and Ramanathapuram at an estimated cost of Rs.124.15 crore. Construction of 4 new bridges in Dindigul and Erode Districts at an estimated cost of Rs.1.79 crore is in progress.

Details of these works are as under:

- In order to protect the bridge abutting along the regulator, construction of a Causeway across Kosasthalaiyar downstream side of Sathiyamoorthy Sagar Reservoir at Poondi in Tiruvallur Taluk and District at an estimated cost of Rs. 2.86 crore is completed. This causeway connects the Poondi Panchayat road to Rangapuram, Krishnapuram, Nayabakkam, Nambakkam and Ariyathur Village roads etc.

- Improvements to the approach road to the memorial of Late Thiyagi Immanuel Sekaran in Paramakudi

Taluk of Ramanathapuram District are completed at an estimated cost of Rs. 2.60 crore.

- Walking path and Landscaping arrangements in both banks of Grand Anicut Canal from Irwin Bridge to Nagapattinam Road Bridge in Thanjavur Town is completed at an estimated cost of Rs.2.35 crore.

- **Hon'ble Chief Minister,** during the Collectors' Conference-2012, announced the construction of a High level bridge across river Kollidam at mile 45/5 + 50m in Azhagiamanavalam Village to connect left bank of Kollidam with Melaramanallur Village in Ariyalur Taluk and District at an estimated cost of Rs.48 crore and preliminary works are under progress. This scheme enables the public an easy accessibility to schools, colleges and hospitals.

- Construction of bridge at Ambalavarkattalai to Sundagudi road in Km 3/2 across Maruthaiyaru river (Km 51/0) in Ariyalur Taluk

and District at an estimated cost of Rs. 10 crore is in progress.

- Construction of the following new Bridges in Ariyalur Taluk and District have been completed.

    1. Bridge *across* Uppodai (LS 400m) in Palayapadi Village in Ariyalur Taluk and District at an estimated cost of Rs.26 lakh.

    2. Bridge across Nandiyar main canal at mile 5/4-5 in Kulamanikkam Village in Ariyalur Taluk and District at an estimated cost of Rs.26 lakh.

- Construction of High Level Bridge at Vayalur Road crossing across Kudamuruty River at an estimated cost of Rs. 2.80 crore is completed.

- Formation of BT Road on Left Bank of Uyyakondan channel in Tiruchirappalli District at an estimated cost of Rs.2 crore is completed.

- Formation of BT Road on Right Bank of Kudamuruty river from Puthur weir in Tiruchirappalli District at an estimated cost of Rs.1.60 crore is completed.

- Construction of a Causeway across Kuthiraiyar river and a Culvert in Panchanthangi supply channel near Myladumparai in Pappampatti Village of Palani Taluk in Dindigul District at an estimated cost of Rs.63 lakh is in progress.

- Construction of 3 Bridges in Erode District sanctioned at an estimated cost of Rs.1.16 crore are in progress.

3.20. Development of Parks

- Development of Park arrangements at Jederpalayam in Namakkal District at an estimated cost of Rs.4.56 crore is in progress.

- Development of Kallanai Tourist spot at an estimated cost of Rs.4.08 crore in Thanjavur District is nearing completion.

- Development of Park in Mukkombu in Srirangam Taluk of Tiruchirappalli

District at an estimated cost of Rs.3.10 crore is nearing completion.

3.21. Command Area Development and Water Management Programme (CADWMP)

The Correction of System Deficiency component under Command Area Development and Water Management Programme is completed in the year 2011-12 at an estimated cost Rs.14.41 crore benefiting an ayacut of 59,321.25 acre in the following projects:

1. Wellington Reservoir Project in Cuddalore District
2. Thirukoilur Anicut Project in Villupuram District
3. Gundar - Chittar - Karuppanadhi Project in Tirunelveli District

3.22. AWARD FOR BEST MAINTAINED DAM

Hon'ble Chief Minister, in order to give a fillip for maintaining the dams in good condition, has

instituted an award for the "Best Maintained Dam". This award is being given by the **Hon'ble Chief Minister** every year for the selected dam.

For the year 2011-12, Vaigai Dam was selected as the best maintained dam.

For the year 2012-13, MULLAI PERIYAR Dam was selected as the best maintained dam.

For the year 2013-14, the Parambikulam group of Dams (Parambikulam, Thunacadavu and Peruvaripallam) were selected as the best maintained dams.

4.0. TAMIL NADU ON THE PATH OF DEVELOPMENT - VISION 2023 OF THE HON'BLE CHIEF MINISTER

Under the dynamic, visionary leadership and guidance of the **Hon'ble Chief Minister**, the Water Resources Department is taking many initiatives to implement the core policy of the Vision 2023 "**Assurance of timely irrigation"**. The Vision 2023 Document released by the **Hon'ble Chief Minister** outlines several new proposals to face the challenges of ever increasing demand for water for irrigation and drinking.

The **Hon'ble Chief Minister** with great foresight has given due priority for the development of Irrigation infrastructure. Based on the vision, two Committees to study and analyse the existing system and to give recommendations to the Government for effectively implementing the vision have been constituted. These two Committees are:

1. Task Force Committee-Vision 2023

2. Committee on Effective Utilization of the North - East Monsoon generated flood water

4.1. To achieve the objectives of **Hon'ble Chief Minister's** Vision 2023, ascertained in "Vision Document for Tamil Nadu" which was released in March 2012, a sum of Rs.16,000 crore has been earmarked for Agricultural Sector / Irrigation for development of water resources. The major infrastructure works include, formation of reservoirs, tanks, restoration of wells, improving the connectivity of dams and canals, extending micro irrigation and establishment of Service Centres of Excellence for water resources management.

4.1.1. VISION 2023 PHASE II – STRATEGIC PLAN FOR INFRASTRUCTURE DEVELOPMENT IN TAMIL NADU

The **Hon'ble Chief Minister** released the Vision 2023, Phase II, covering the Project Profiles of the Vision Tamil Nadu 2023 – Strategic Plan for Infrastructure Development in Tamil Nadu on 17.02.2014. In this document, Schemes for better Irrigation Management, Water Storage and Supply have been outlined for implementation at a total outlay of Rs.57,000 crore over a period of next 10 years.

4.1.2. RECOMMENDATIONS OF TASK FORCE COMMITTEE – VISION 2023

For preparing a systematic programme of execution in Irrigation Sector and to accomplish the targeted goals of the Vision 2023, the Task Force Committee

has recommended the following initiatives:

(Rs. in crore)

Sl. No	Description	Cost
1	Construction of new storages including farm ponds.	1199
2	Increasing the storage capacity of selected tanks / reservoirs, storages located in the coastal belt and improving the Kazhuveli swamp.	515
3	Construction of artificial recharge structures	1301
4	Intra-linking of rivers	12370
5	Rehabilitation and Modernisation of reservoirs, tanks, Irrigation systems, Greening the catchment areas and localisation of ayacut	12925
6	Adopting SRI practices in the ayacut in G.A. Canal and PAP commands, introducing Piped irrigation and Micro irrigation practices	2000
7	Introducing new Lift Irrigation Schemes	166
8	Recycling / re-use of waste water	6250
9	De-salination of Sea Water	4000

Sl. No	Description	Cost
10	Clearing and improving the city waterways and Prevention of Sea Water intrusion	2670
11	Cloud seeding operation for increasing the rainfall in the delta area over a period of 10 years.	18
12	Transforming the institutions of WRD as Centres of Excellence	86
	Total	**43500**

About 85% of available water is used for irrigation. This usage can be reduced considerably by increasing the irrigation efficiency. For that, the measures suggested include, protecting the catchment area from erosion, rehabilitating the dams and tanks, modernizing the distribution systems in Cauvery delta, Palar, Pennaiyar, Vellar, Parambikulam Aliyar, Vaigai, Thamiraparani and Kothaiyar systems, extending lift irrigation systems to the needed areas and improving the water ways and drains. By this, the overall irrigation efficiency in the State can be increased by about 10% over a period of 10 years and a quantity of 240 TMC

ft. of water can be saved. For this, a sum of Rs. 16,380 crore will be required over a period of 10 years.

- By adopting Micro Irrigation techniques, namely, Drip Irrigation and Sprinkler Irrigation and also by practicing SRI (System of Rice Intensification) method for Paddy cultivation, a quantity of 105 TMC ft. of water can be saved. The approximate investment required for this is Rs.2000 crore.

- By treating domestic waste water and industrial effluent and recycling, a quantity of about 75 TMC ft. of water can be made available for reuse. For implementing this, Rs.6250 crore will be required.

- By creating new storage structures, desilting the existing storages and intra-linking of rivers, a quantum of 30 TMC ft. of flood water can be harnessed. The approximate cost required for this is Rs.13,470 crore.

- By constructing artificial recharge structures such as check dams, bed

dams, sub-surface dykes and farm ponds, a quantity of 45 TMC ft. of ground water can be harnessed. The approximate cost required for this is Rs.1400 crore.

- By de-salination of sea water for drinking purpose, wherever it is needed in addition to the existing plants, a quantity of 5 TMC ft. of water can be made available. The approximate cost required for this is Rs.4000 crore.

- By implementing the above proposals, it is expected that about 500 TMC ft. of water can be saved / augmented over a period of 10 years. The approximate cost required for the above proposals is estimated as Rs.43,500 crore.

The action to be taken, on the new projects required for implementing the recommendations of the committee, are mentioned below:

4.2. EFFECTIVE UTILISATION OF THE NORTH - EAST MONSOON GENERATED FLOOD WATERS

To effectively utilise the flood water generated during the North-East Monsoon, a Technical Committee was constituted which studied monsoon flows especially near the coastal areas and recommended proposals to effectively harness and utilise the flood water generated during the North-East monsoon which is of short duration, high intensity rainfall and concentrated in the coastal areas of Tamil Nadu.

This Committee recommended proposals in 12 categories with some specific recommendations to be implemented over a period of 10 years at an approximate outlay of Rs.13,560 crore and as follows:

(Rs. in crore)

Sl. No.	Category	Estimate
1.	Restoring / Improving the capacity of existing storage structures / Tanks	497.68

2.	Restoring / Improving the discharging capacity of channels for providing rush supply to the Tanks	7.00
3.	Constructing bed dams across rivers / tributaries for facilitating to divert the flood flows to the Tanks	126.00
4.	Constructing check dams across rivers / tributaries for improving ground water recharge	593.60
5.	Provision for artificial ground water recharge through tanks and by utilizing defunct wells	11.00
6.	Providing recharge shafts in the tanks for recharging deep aquifers	5.00
7.	Constructing new reservoirs	886.30
8.	Pumping / Lift Irrigation Schemes	30.74
9.	Intra-linking of rivers	11,395.00
10.	Improving the observation of the flows in the tail end of the rivers	3.00

11.	Conducting performances / impact studies on the existing diversion/ recharge structures	2.00
12.	Conducting studies for evolving appropriate viable methodologies for removing silt from reservoirs / lakes and for utilizing it beneficially / disposing it	3.00
	Grand total	**13,560.32**
	(or) Rs.13,560 Crore	

4.3. ROAD MAP FOR THE WATER RESOURCES DEPARTMENT FOR THE FUTURE

To translate the Vision 2023 into effective action, the Water Resources Department has, now, identified the following initiatives which will be implemented in a phased manner.

4.3.1. REHABILITATION OF CAUVERY BASIN SYSTEM

The Cauvery River basin consists of 18 sub basins. Since the systems in these sub basins are very age old and the coastal areas are of flat terrain and subjected to heavy rainfall because of climate change causing floods in the delta areas, it is essential to modernize the systems in this basin.

Due to Inter-State Water issues between the States in sharing the Cauvery water, the irrigation systems in Cauvery basin have been denied major financial assistance from the funding agencies / Central Government.

Due to untiring and persistent efforts of the **Hon'ble Chief Minister** the Cauvery Tribunal Award has been notified by the Government of India in the Gazette.

This has paved the way to undertake the Rehabilitation and Modernisation work in this basin by

tapping the funds from multilateral funding agency of Central Government.

A preliminary project proposal on the "Improvements and Rehabilitation of irrigation systems in Cauvery basin for efficient water management" was prepared for an amount of Rs.11,420 crore and in-principle clearance has been accorded by the Central Water Commission.

The important components of this proposal envisages, improving and rehabilitating the systems in Cauvery basin area of Cauvery Sub basin, Vennar Sub basin, Lower Coleroon Sub basin, Grand Anicut canal Sub basin and the other systems of Kattalai High Level Canal Project, Lower Bhavani project, Noyyal Sub basin and certain other ground water recharge schemes.

In the Phase-I, clearance of the Central Water Commission for Detailed Project Report for the

Grand Anicut Canal system will be obtained and it is proposed to be taken for implementation in the current year.

To overcome the significant challenges of climate change, a proposal to improve the irrigation infrastructure in delta areas, to ensure smooth flow of flood water and to prevent the intrusion of sea water, is being taken up at a cost of Rs.1560 crore in the Cauvery delta with Asian Development Bank assistance under Climate Change Programme and the works in the Phase-I will commence in the current year.

4.3.2. REHABILITATION OF IRRIGATION SYSTEMS IN OTHER BASINS

The irrigation systems in a few basins of Tamil Nadu have been rehabilitated in a major way under WRCP and IAMWARM project. Still, the Periyar Vaigai system in Theni, Madurai and Sivagangai Districts, the Thirukovilur Anicut system in

Villupuram District, the Kothaiyar Irrigation system in Kanniyakumari District and the numerous channels taking off from the river Tamirabarani such as Palayam channel, Tirunelveli channel and Kodagan channel in Tirunelveli District and other irrigation infrastructures and many medium and minor systems need rehabilitation and modernization for effective functioning. The WRD has embarked upon a definite action plan for undertaking the above rehabilitation schemes, so as to improve the irrigation.

4.3.3. REHABILITATION OF TANKS

Out of 13,779 tanks maintained by the Water Resources Department, about 3350 tanks have been rehabilitated under IAMWARM and other schemes.

Still there are about 7429 tanks which need to be rehabilitated and this work will be taken up on a priority basis. Apart from rehabilitation, works like capacity

enhancement by desilting will also be contemplated. The provision of wells in the water spread area for recharge of ground water and for domestic use during off-season periods, will also be taken up.

4.3.4. CREATION OF SMALL STORAGE RESERVOIRS AND TANKS

Rainfall in the State is not uniform throughout the year and does not occur in all places. Major portion of rainfall occurs in the North-East monsoon period. Therefore, to meet the need for water throughout the year, there is a necessity for creation of storage structures.

The scope for construction of new reservoirs is remote, especially in coastal areas. However, a few locations near the Western Ghats still offer scope to conserve the flash floods for strategic utilization during non monsoon periods. The few examples of such projects are the Musukundanadhi reservoir in Villupuram District, Valamalayar reservoir, Elumichaiyar reservoir

and Vallimalai odai reservoir in Tirunelveli District, Puliankombai tank scheme in Erode District and Vellaripallam tank scheme in Krishnagiri District.

These schemes will be considered for execution based on techno-economic viability and land acquisition issues.

4.3.5. COASTAL PROTECTION WORKS –STUDY AND IMPLEMENTATION

A comprehensive study on coastal erosion of remedial measures will be taken up. A consultant will be appointed to undertake the study and prepare a comprehensive Detailed Project Report for adopting a holistic approach towards carrying out anti sea erosion works. This study will be carried out on the entire coast of Tamil Nadu.

4.3.6. TAIL END REGULATORS AND CHECK DAMS

To harness and utilize the significant quantity of surplus flood water available during North-East monsoon period and by studying the run off in the tail end areas, it is proposed to construct barrages / sub surface dykes to store water for irrigation and recharging the Ground water. Further, during non-monsoon periods, these schemes will help to prevent the intrusion of sea water for nearly 10 to 20 km inland, polluting the ground water.

Accordingly, it is proposed to commence the rehabilitation of the existing tail end regulators and to construct new regulators in rivers at tail end regions of Cauvery basin, soon.

The WRD would like to extend this concept to all the rivers in the State especially to arrest estuarine pollution. Notable examples of such scheme are the Voyalur barrage in Palar basin of Kancheepuram

District, the Adhivaraganallur barrage in Vellar basin of Cuddalore District, the Adhanur barrage in Kollidam river in Cuddalore and Nagapattinam Districts and the Eraiyumanthurai check dam scheme in Kothaiyar basin of Kanniyakumari District which will be investigated and implemented.

4.3.7. ARTIFICIAL RECHARGE STRUCTURES

A fairly large number of artificial recharge structures such as check dams, percolation ponds, sub surface dykes, recharge shafts were undertaken under the Artificial Recharge of ground water scheme. These structures have given notable positive results.

The Committee for harnessing North-East monsoon floods has laid special emphasis on the construction of such structures in identified locations in various basins. The WRD will adopt a holistic approach in identifying possible locations and based on the

hydrology and other factors, action will be taken to construct a significant number of artificial recharge structures throughout the State.

4.3.8. DESILTING OF SPECIFIC WATER BODIES

Most of the water bodies in the State have reduced in capacities due to siltation. Hence, it is not possible to store to the full capacity during flood periods. It is very important to restore the capacity of these water bodies by desilting.

It is now proposed to desilt the bed of the tanks and based on feasibility, it is proposed to form islands in the water spread area and strengthen the bunds.

The Vengal tank in Araniyar basin of Tiruvallur District, Kaveripakkam tank in Palar basin of Vellore District, Perumal tank and Wallajah tank in Paravanar basin of Cuddalore District, Panangudi tank in Cauvery delta of Nagapattinam

District and Nambipuram and Kalakeriyaperumalpatti tanks in Vaippar basin of Thoothukudi District will be taken on priority basis. The improvements to Kazhuveli Swamp in Villupuram District will be considered for storage of fresh water. Based on the study and success of a few tanks of implementation, further proposals will be evolved since this is one of the cost effective ways of harnessing and storing flood waters.

4.3.9. INTERLINKING OF RIVERS

Hon'ble Chief Minister, in the memorandum presented to Hon'ble Prime Minister of India on 03.06.2014, has requested the Government of India that the ***Special Committee for Inter-linking of rivers should be activated and all Inter-State rivers should be nationalised so that water resources of the Country are optimally utilized.***

The Hon'ble Chief Minister has also requested the Government of India to sanction the Inter-linking of Rivers Scheme within the State, expeditiously.

The following interlinking of rivers are in process:-

1. Tamirabarani - Karumeniyar – Nambiyar link
2. Cauvery – Vaigai – Gundar Link
3. Pennaiyar (Sathanur Dam) – Palar link
4. Pennaiyar (Nedungal Anicut) – Palar link
5. Cauvery (Mettur Dam) – Sarabanga link

1) Thamirabarani – Karumeniyar – Nambiyar Link:

The first two stages of the link project have been completed utilizing the State fund, pending funding assistance from Government of India under Accelerated Irrigation Benefits Programme (AIBP). Action has been initiated for obtaining

environmental clearance for the project as requested by the Government of India. Permission has been accorded to M/s.WAPCOS Ltd. to prepare Environmental Impact Assessment Report and to obtain clearance from Government of India. The environmental clearance is expected to be obtained before November 2014 and subsequently necessary action will be taken to obtain funding assistance from Government of India under AIBP.

This Government have accorded permission to commence the land acquisition process for third and fourth stages (final stage) of the project during January 2014 and the works are in progress.

2) Cauvery–Vaigai – Gundar Link

The detailed project report at a cost of Rs. 5166 crore sent to Government of India seeking funding assistance under Flood Management Programme (FMP) was returned by the previous Central Government. In the Memorandum presented to the Hon'ble Prime Minister

on 03.06.2014, the **Hon'ble Chief Minister** has requested the Central Government to approve the scheme.

The first phase of the project viz. construction of Kattalai Barrage across Cauvery river at a cost of Rs.234 crore has been completed under State fund. The structure is a head work of the above link. The **Hon'ble Chief Minister** inaugurated the scheme on 25.06.2014.

3) Pennaiyar (Sathanur Dam) – Palar Link:

The **Hon'ble Chief Minister** ordered to implement the scheme under State fund in anticipation of funding assistance from Government of India. The estimate for the scheme was prepared for Rs.250 crore.

The New Land Acquisition Act enacted by the Government of India came into force from 1st January 2014. The Scheme is being revised and the tentative cost now stands escalated to Rs.360 crore due to new land acquisition norms and revision in rates

for 6 years. The revised scheme will be sent to Central Water Commission for funding assistance under AIBP.

4) Pennaiyar (Nedungal Anicut) – Palar Link

The National Water Development Agency (NWDA) is in the process of preparing the Detailed Project Report (DPR) and the field works are nearing completion. This Government provide necessary support and co-ordination to NWDA in the preparation of DPR. A Chief Engineer Level committee has been formed by the Government on 16.06.2014 to sort out the policy decisions in respect of finalization of DPR. The preparation of DPR is likely to be completed by March 2015.

5) Cauvery (Mettur Dam) – Sarabanga Link

The estimated cost for this scheme is Rs.1134 crore at 2012-2013 price level. Sanction has been accorded for carrying out surveying and levelling operations at an estimated cost of Rs.50 lakh. The works are in progress.

5.0. SCHEMES PROPOSED TO BE TAKEN UP IN THE FINANCIAL YEAR 2014 – 2015 (INCLUDING ONGOING SCHEMES)

Based on the announcements of the Hon'ble Chief Minister and based on the representations of Hon'ble Ministers, MLAs, MPs, General Public and recommendations of various Committees, schemes are prioritised with utmost care.

Apart from the new schemes sanctioned during 2013-14 which are to be taken up for implementation, the ongoing schemes would be continued during the year 2014-15, so that the desired objectives are fulfilled. The schemes in advanced stages would be completed during this year.

The following Schemes for a total cost of Rs.3485.59 crore categorised as formation of new reservoirs, water supply schemes, new tanks across streams and rivers, Excavation of new supply channels, Check dams, Bed dams, Grade walls and Artificial recharge structures across various tributaries

and rivers, Rehabilitation of anicuts, Tanks, Traditional water bodies, regulators, canals and channels, Flood Protection works, Coastal protection works such as construction of Groynes, RMS walls, spurs, sea walls and training walls, Parks / Tourism promotion activities, Memorials / Buildings, Climate change adaptation in Cauvery delta, Roads and Bridges, Environmental protection works and Innovative schemes are takenup:

Formation of New Reservoirs

(Rs. in crore)

Sl. No	Name of work	Cost	Stage of work
1	Formation of a New Reservoir near Kannankottai and Thervaikandigai village in Gummidipoondi Taluk of Thiruvallur District	330.00	31% works completed
2	Formation of Reservoir across Marudaiyar river near Kottarai village in Kunnam taluk of Perambalur District.	108.00	Land Acquisi-tion is in progress

3	Formation of Earth Dam and construction of Spillway and River Sluices across Malattar River at Bathallapalli village in Gudiyatham Taluk of Vellore District.	29.55	31% works completed
	Total	**467.55**	

Formation of New Tanks and Ponds

(Rs. in crore)

Sl. No	Name of work	Cost	Stage of work
1	Formation of a new tank across Kallar Odai near Viswakudi in Thondamanthurai village of Veppanthattai Taluk in Perambalur District	19.00	75% works completed
2	Formation of a new tank across the Nallathangal Odai near Kothayam village of Oddanchatram Taluk in Dindigul District	6.97	80% works completed
	Total	**485.97**	

Rehabilitation of Tanks

(Rs. in crore)

Sl. No	Name of work	Cost	Stage of work
1	Restoration of original storage capacity by renovating Chem barambakkam tank and creation of additional water storage in four tanks viz. Chola varam, Porur, Nemam and Ayanam bakkam Tanks		
	a)Cholavaram	0.50	Works completed
	b) Porur	20.00	75% completed
	c) Ayanambakkam	30.00	90% completed
	d) Nemam	79.50	15% completed
2	Upgradation of Peikulam, Pettaikulam and Korampallam tanks into Reservoir in Thoothukudi District	20.07	60 % completed

3	Rehabilitation and Modernisation of Avvaiyarkuppam tank at Varahanadhi sub basin in Tindivanam Taluk of Villupuram District	1.15	Works in Progress
4	Rehabilitation of irrigation infra structure in Anaivari odai sub basin tanks, left out works and left over tanks in Sendurai taluk of Ariyalur District	2.98	Works in Progress
5	Rehabilitation of left over irrigation infra structure in Agniyar sub basin Ganga tharapuram Anicut, Pudirivayal Anicut and Karkulam Vari Anicuts and its group of tanks in Thanjavur District	4.96	Works in Progress
6	Restoration of 160 Traditional Water Bodies in Ariyalur, Dindigul, Kanchee puram, Madurai, Namakkal,	50.30	Works to be takenup.

	Ramanathapuram, Sivagangai, Tiruvallur, Tiruvannamalai, Thanjavur, Tiruchirappalli, Virudhunagar, Vellore and Villupuram Districts.		
7	Improvement of Valaiyathur Tank in Arcot Taluk of Vellore District.	0.53	Works to be takenup.
8	Improvements of Veeranam Tank for supplying drinking water to Cuddalore District and execution of New Veeranam Project in Chidambaram Taluk in Cuddalore District.	106.35	Works Completed
9	Restoration of 132 Traditional Water Bodies in Cuddalore, Dharmapuri, Kancheepuram, Krishnagiri, Tiruvallur, Tiruvannamalai, Vellore and Villupuram Districts.	34.29	Works in Progress
	Total	**350.63**	

To facilitate free flow of water from the tank through the sluice into the field channel without hindrance and to measure the quantity of water released from the sluices of tanks, install flow measuring device to line the head reach of field channel for a value of Rs.71.50 crore in rehabilitated Tanks in 25 sub basins under IAMWARM project and the works are in progress.

13th Finance Commission Grants –in-Aid Restoration of Traditional water Bodies

(Rs. in crore)

Sl. No.	District	Name of Tanks	No. of Tanks	Estimate
Phase II (2012-13)				
1	Kanchee puram	Thattambattur Chitteri, Uthukkadu Tank, Thimmasa mudram Tank	3	1.52
2	Krishnagiri	Adavanga Tank, Masdhihalla Tank	2	0.47

3	Ramanatha puram	Siruvayal Tank, Anjamadai kachan Tank, Agaram Tank, Panaiyur Tank	4	1.17
4	Sivagangai	Themmam pattu	1	0.53
5	Tiruvallur	Panapakkam Periya Eri Chitteri	1	0.32
6	Thoothukudi	Korkai	1	1.78
7	Vellore	Karivedu chithanji Tank	1	0.19
		Total	**13**	**5.98**
Phase III (2013-14)				
1	Ariyalur	Thuthur Eri	1	0.59
2	Cuddalore	Puliyur Tank, Karkudal Tank, Kutiankuppam Tank,Karumbur Thangal Tank, Krishnan Kuppam Manakkollai Hissa Tank, Vayalur Tank, Aladi Tank, Akkadavalli Tank	8	2.22
3	Dharmapuri	Bommanur Tank, Dobbai pallam Tank, Erupalli Tank, Dhalavalli Tank	4	0.84

4	Kanchee puram	Mugaiyur Tank, Nedumaram Tank, Manamai Tank, Kunnathur Tank, Valar kundram Tank, Karumbur Tank, Valaya karanai Big Tank, Sembakkam Tank, Ottiyam pakkam Tank, Anur Tank, Vazhuvadur Tank, Kilpakkam Tank, Thenneri Hissa Tank and Kolathur Tank	14	4.24
5	Krishnagiri	Achamangalam Tank, Narayanappan Tank, Balinayana palli Tank, Chinna mattarapalli Tank, Rangappa Naicken Tank, Byaskhan Tank, Kattusingiripalli Tank, Badethalav Tank and Naralapalli Tank	9	2.81

6	Madurai	Illapakudi Tank, Vavida maruthur Tank, Vedathakulam, Achankulam, Mannadi mangalam Tank, Arumbanur Tank and Chetikulam	7	2.13
7	Pudukottai	Vennavikulam Tank	1	0.36
8	Ramanatha puram	Vayalur Tank, Paroor Tank and Karunkulam	3	0.56
9	Sivagangai	Ammi Tank	1	0.21
10	Thanjavur	Sadayan Eri, Ayyanar Eri, Pappan Odai, Vellaiyan Eri, Sembaneri, Karisavayal Odai Eri, Navakulam, Velleri, Sirupala kulam,Vannathi odai, Andami Periya Eri, Kandeawaram Tank, Mudathali Tank, Sengal odai Tank, Ettivayal Eri, Manjan Eri,	48	12.28

		Valayankulam, Kallathikulam, Kallivayal Eri, Ammayandi Eri, Manjakuppam Eri, Kasan kulam,Vengarai Periya Eri, Senniyakulam Tank, Valayan kulam, Selli kuruchi Tank, Katchakulam Tank, Kuppa thevan Tank, Karupperi, Pinneri Tank, Chithandi Tank, Thatchankulam Tank, Moothan kuruchi Periya Eri, Athana kulam, Painkattuvayal Eri, Velankadu Tank, Naval Odai, Mela marichi kattai Eri, Ayyanar kulam Tank, Pudu kulam Tank, Seetha kulam, Palli Odaivayal, Sevidayakulam Tank,Parakkala kulam,		

		Edaiyathi Tank, Pudukulam, Navalur Tank and Kavani Eri		
11	Theni	Athikarikulam	1	0.35
12	Tiruvallur	Vediyangadu Tank, Periya nagapudi Tank, Silambu Tank, Nabalur Pudu Eri, Ponni mangadu Big Tank, Ayyaneri, Alamelumanga puram Tank, Raghava naidu kuppam Tank, Papparam bakkam, Sembaram pattu Tank, Erumbi Tank, Sirkali puram Tank and Velancheri Tank	12	2.64
13	Tiruvanna malai	Nethapakkam Tank	1	0.16
14	Tiruchira ppalli	Sevanthan kulam,Puranthakulam, Asur Tank, Poyyakudi Tank, Sevantha kulam	5	1.93

15	Vellore	Melakuppam Tank, Maruthalam Tank, Velam, Kolatheri Tank, Gudalur Tank, Panavattam badi, Sema samudiram Tank, Budur Tank, Sekkanur Tank, Puthar Tank, Periya mangalam and Vallimalai vellaneri Tank	12	2.11
16	Villupuram	Vengur Chiteri, Nannadu Tank, Mambakkam Tank, Vada siruvalur Tank, Vedampattu Tank, Chola vandi puram Tank, Panja madevi Pudu Eri Thangal, Kongampattu Tank, Kondangi Tank, Motcha kullam Tank, G.Ariyur Tank, Athipakkam Tank, Otteri palayam Tank, Kalanchi kuppam Tank,	35	8.61

		Vengathur Tank, Purangari Tank, Elaram pattu Tank, V.Puthur Tank, Navamal Marudur Tank, Vadamalayanur Tank, Rampakkam Tank, Ravutha nallur Tank, Paranur Tank, Urangani Tank, Mallapuram Ganapathi Tank, Palagacherry, Poikunam Tank, Chellampattu, Vadachetti andal Tank, Velananthal Tank, Kosapadi Tank, Malla puram Vairan dhangal Tank, Poovarsan kuppam Tank, Pandalam and Kachirapalayam Tank		

17	Virudhu nagar	Pudukottai Periyakulam, Injar Naduva patti, Veppilaipatti and Sirukulam	4	1.10
			Total	**166**	**43.14**

Phase III (2013-2014)

(Rs. in crore)

Sl. No.	District	Name of Tanks	No. of Tanks	Estimate
1	Madurai	Pappakudi	1	0.19
2	Rama Natha puram	Kalayanur, Vannikudi and Vaigai	3	0.55
3	Thoothu kudi	Keelamangalam, Eppodumvendran, Therkkukalmedu, Kollamparambu and Vellaramkarisalm edu	5	2.21
4	Vellore	Kelmelkuppam Chitteri	1	0.15
5	Villupuram	Melmalayanur Tank, Anumanthai Vanchi Kuttai Tank, Kandampakkam Tank and Kadampakkam	4	1.88
		Total	**14**	**4.98**

Phase IV (2014-2015)

(Rs. in crore)

Sl. No.	Names of Tanks	No. of Tanks	Estimate
I	**Chennai Region**		
	Tiruvallur, Kancheepuram, Villupuram, Tiruvannamalai and Vellore	72	24.85
II	**Tiruchirappalli Region**		
	Thanjavur, Tiruchirappalli, Ariyalur and Namakkal	65	18.67
III	**Madurai Region**		
	Dindigul, Madurai, Virudhunagar, Sivagangai and Ramanathapuram	23	6.78
	Total	**160**	**50.30**

Formation of New Canals and Supply Channels

(Rs. in crore)

Sl. No.	Name of work	Esti mate	Stage of work
1	Excavation of new supply channel to feed Kagankarai tank in Tirupattur Taluk of Vellore District	2.71	Work commenced
2	Excavation of supply channel from Senganbasuvanthalav tank to divert flood surplus water of Chinnar river to feed Endapatti tank, Kondasamanahallu tank and 8 other inter-mediate tanks in Palacode Taluk of Dharmapuri District	10.20	Works to be takenup
3	Linking of Parambilkulam Aliyar Project System to Uppar canals in Dharapuram Taluk of Tiruppur District	8.10	Works to be takenup
4	Formation of Flood carrier canal from Kanjampatti odai of Vilathikulam Taluk in Thoothukudi District to feed Sayalkudi and other tanks in Kamuthi and Kadaladi Taluks of Ramanathapuram District.	18.00	15% of works completed
	Total	**39.01**	

Rehabilitation of Canals and Supply Channels

(Rs. in crore)

Sl. No	Name of work	Esti mate	Stage of work
1	Rehabilitation of Veeranam tank and Vadavar channel in Cuddalore District	40.00	Works to be takenup
2	Permanent restoration and flood protection works to Aanaipappankulam tank surplus course in Thirumangalam town of Madurai District	11.00	Works to be takenup
3	Regradation of Therkkar river from Santhankudi anicut to Melakottai anicut in Thirumangalam Taluk of Madurai District	3.06	Works to be takenup
4	Rehabilitation of Contour Canal from LS 0.00 km to LS 49.30 km in Tiruppur and Coimbatore Districts	184.50	81% of works completed
5	Rehabilitation of Kalinga rayan channel from mile 0/0-000 to 3/3-000 in Erode Taluk and District	41.00	68% of works completed
6	Modernisation of Vadavar extension canal from LS 33.01 to 44.82 km in Mannargudi Taluk of Thiruvarur District	23.00	50% of works completed
7	Rehabilitation of Thovalai Channel and Radhapuram Channel including tanks in Kanniyakumari District	22.50	81 % of works completed

8	Protection works in the upstream of Vadaka nanthal anicut across Gomuki river and Rehabilitation of Thengiya natham supply channel in Gomuki river sub basin at Chinnasalem Taluk of Villupuram District.	6.52	Works in Progress
9	Rehabilitation and Modernization of Nandan Channel from LS 0 km to LS 12.40 Km in Thurinjalar sub basin at Tiruvanna malai Taluk and District	4.42	Work in Progress
10	Rehabilitation and Modernization of Nandan Channel from LS 12.40 km to LS 37.88 km in Varahanathi sub basin at Gingee and Villupuram Taluks of Villupuram District	9.89	Works in Progress
11	Rehabilitation and Lining the Thandarai Anicut left main canal in Cheyyar-Killiyar sub basin at Cheyyar Taluk of Tiruvannamalai District.	14.84	Works in Progress
12	Rehabilitation of Thirumangalam main canal in Therkaru sub basin at Usilampatti Taluk in Madurai District.	9.57	Works in Progress
13	Rehabilitation and Modernisation of Anjukal	1.86	Works in Progress

	supply channel in Kathalampatti village in Manimutharu sub basin at Tirupathur Taluk of Sivagangai District		
14	Rehabilitation of Chakkilichikulam tank and Nallidaichery tank supply channel from Duraisami puram anicut in Upper Vaigai sub basin at Duraisami puram village of Theni District.	2.97	Works in Progress
15	Rehabilitation of Koothankal Supply Channel in Paramakudi and Mudukulathur Taluks in Uthiragosamangai sub basin at Ramanathapuram District	5.88	Works in Progress
16	Rehabilitation of left out lining of branch canal IV and V of Thirumangalam main canal in Therkaru sub basin at Usilampatti Taluk of Madurai District.	4.77	Works in Progress
17	Lining of main canal and Distributories of the Anaimaduvu Reservoir and Kariyakoil Reservoir Projects in Upper Vellar sub basin in Salem District	3.64	Works in Progress
18	Rehabilitation of Mettur West Bank Canal from LS 0 m to 3744 m in Mettur Taluk of Salem District	13.35	Works in Progress

19	Rehabilitation of Mettur West Bank Canal from LS 3744 m to 7283 m in Mettur Taluk of Salem District	17.15	Works in Progress
20	Rehabilitation of Mettur East Bank Canal from LS 1105 m to 6655 m in Mettur Taluk of Salem District	19.10	Works in Progress
21	Reconstruction of tunnel in Ponnar channel across Marudaiyaru river at LS 65.80 km in Ponnar channel sub basin at Muthuvancheri village of Udayarpalayam Taluk in Ariyalur District	5.05	Works in Progress
22	Rehabilitation of Raja Channel and its Bed Dam in Vadakarai Athur Village in Raja channel sub basin at Paramathivellur Taluk of Namakkal District	6.50	Works in Progress
23	Rehabilitation of Kadathur old channel in Amaravathi River system of Tiruppur District	0.89	Works in Progress
24	Rehabilitatiion and Restoration of Alangium Leading Channel in Dharapuram Taluk of Tiruppur District	0.30	Works completed

25	Construction of Gauging bridges at L.S 32.80 km and L.S 42.48 km of Amaravathi Main Canal in Madathukulam Taluk of Tiruppur District	0.41	Works completed
	Total	**452.17**	

Formation of New Check dams, Bed dams, Grade walls and Artificial Recharge Schemes

Check dams

(Rs. in crore)

Sl. No.	Name of work	Estimate	Stage of work
1	Construction of Check dam across Kodaganar near Agaram village in Dindigul District	6.80	Works to be takenup
2	Construction of 2 Check dams across Vaigai River at Valipparai and Govindanagaram villages in Andipatti Taluk of Theni District	4.95	Works to be takenup
3	Construction of Check dam across Kodaganar near Thirukoornam village in Vedasandur Taluk of Dindigul District	4.10	Works to be takenup
4	Construction of a Check dam across Ayyanapuram vari and Nandavanapatti drain below Grand Anicut Canal crossing at	1.50	80% of works completed

	LS 8250M and LS 3250M respectively in Ayyana puram and Sanjivipuram villages of Thanjavur Taluk and District		
5	Construction of Check dams across Vallam Vari drain at LS 13.00 Km, 17.50 Km, 20.20 Km in Vandaiyariruppu, Sadaiyar kovil, Chinnaponnapur Villages of Orathanadu Taluk in Thanjavur District	1.40	75% of works completed
6	Construction of Check dam across Nasuviniyar Drain at LS 5.50 Km in Thitta kudy Village of Pattukkottai Taluk in Thanjavur District	1.20	75% of works completed
7	Construction of Check Dam across Pattuvanachi Drain at LS 19.20 Km in Moothakurichi Village of Pattukkottai Taluk in Thanjavur District	1.05	90% of works completed
8	Construction of Check dam across Pattuvanachi Drain at LS 23.00 Km in Vattakudy Village of Pattukkottai Taluk in Thanjavur District	1.05	90% of works completed
9	Construction of Check dam across Muthalaimuthuvari at LS 16.20 Km in Vannara pettai village of Thanjavur Taluk and District	0.94	90% of works completed

10	Construction of Check dam across Pattuvanachi Drain at LS 15.25 Km in Veppankulam Village of Pattukkottai Taluk in Thanjavur District	0.90	90% of works completed
11	Construction of Check dam across Solagampatti Drain below Grand Anicut Canal crossing at LS 9200 m in Thondarayanpadi village of Thanjavur Taluk and District	0.77	95% of works completed
12	Construction of Check dam across Jambugapuram Vari at LS 14.00 km in Arsuthippattu village of Orathanadu Taluk in Thanjavur District	0.62	80% of works completed
13	Construction of Check dam across Jambugapuram Vari at LS 9.50 Km in Arsuthippattu village of Orathanadu Taluk in Thanjavur District	0.48	55% of works completed
14	Construction of Check dam across Konavari Drain below GA Canal crossing LS 3100M in Kalvirayan pettai Village of Thanjavur Taluk and District	0.42	80% of works completed
15	Construction of Check dam across Vallam vari at LS 10.50 Km in Varavukottai Village of Thanjavur Taluk and District	0.32	85% of works completed

16	Construction of Check dam across Sudukattu vari at LS 3500 M in Vanarapettai Village of Thanjavur Taluk and District	0.26	90% of works completed
17	Construction of Check dam across Vaigai near Kunna ppanendal village below Parthibanur Regulator in Ramanatha puram District	19.50	50% of works completed
18	Construction of a Check dam across Lava river near Pallipattu village and Taluk in Kosasthalaiyar sub basin of Tiruvallur District	5.90	Works in Progress
19	Construction of a Check dam across Kosasthalaiyar near Nallathur village in Tiruttani Taluk of Tiruvallur District	6.50	Works in Progress
20	Construction of a Check dam across Kiliyar river near K.K.Pudur village in Cheyyar - Kiliyar sub basin at Maduranthagam Taluk of Kancheepuram District	4.50	Works in Progress
21	Construction of Check dam in Bellarapalli village in Krishnagiri Taluk and District	0.72	Works in Progress
22	Construction of Check dam across Pambar river in Singarapettai village in Pambar sub basin at Uthangarai Taluk of Krishnagiri District	0.57	Works in Progress

23	Construction of Check dam across Nachikuppam river in Markandeyanadhi sub basin at Viruppasandiram village of Krishnagiri Taluk and District	0.84	Works in Progress
24	Construction of Check dam across Kambainallur river in Kambainallur village in Kambainallur sub basin at Harur Taluk of Dharmapuri District	1.16	Works in Progress
25	Construction of Check dam across Kovilar river in Bairanaickampatti village in Kovilar sub basin at Harur Taluk of Dharmapuri District	0.83	Works in Progress
26	Construction of Check dam across Pambanar near Narayanakuppam village in Pambanar sub basin at Thandarampattu Taluk of Tiruvannamalai District	2.18	Works in Progress
27	Construction of Check dam across Gadilam river near Koothapakkam village in Gadilam sub basin at Cuddalore Taluk and District	16.24	Works in Progress
28	Construction of Check dam across Palar river near Muraiyur village in Manimuthar sub basin at Thiruppathur Taluk of Sivagangai District	1.46	Works in Progress

29	Construction of Check dam across Uppar odai near Kombadi in Korampallam sub basin at Savarimangalam village in Ottapidaram Taluk of Thoothukudi District	1.16	Works in Progress
30	Construction of Check dam across Hanumanadhi river in Thalavaipuram in Parivirisurian village of Radhapuram Taluk in Tirunelveli District	0.55	Works in Progress
31	Construction of Check dam across Kottagudi river near Kombuthookki Ayyanarkoil near Kottagudi village in Theniyaru sub basin at Bodinayakanur Taluk of Theni District	0.71	Works in Progress
32	Construction of Check dam across Kottagudi river near Sannasipuram hamlet of Anaikaraipatti village in Theniyaru sub basin at Bodinayakanur Taluk of Theni District	1.01	Works in Progress
33	Construction of Check dam across Vaigai river near Ammachiyapuram village in Upper vaigai sub basin of Theni District	2.29	Works in Progress
34	Construction of Bed dam across Vaigai river to feed Piramanur, Paralaiyar tank and other nineteen tanks	19.00	Works in Progress

	in Giruthumal sub basin at Thattankulam village of Thirupuvanam Taluk in Sivagangai District		
35	Construction of Check dam across Vaippar river near Nambiyapuram Village in Main Vaippar sub basin at Thoothukudi District	7.89	Works in Progress
36	Construction of Check dam across Vaippar river near V.Vedapatti Village in Main Vaippar sub basin at Thoothukudi District	11.10	Works in Progress
37	Construction of Check dam across Vaippar river near Vaippar Village in Main Vaippar sub basin at Thoothukudi District	14.77	Works in Progress
38	Construction of 7 Check dams and Rehabilitation and Modernisation of 6 anicuts in Upper Vellar sub basin at Salem District	2.64	Works in Progress
39	Rehabilitation and Moderni sation of Infrastructures (left out) including selective lining of canal and construction of 5 Check dams in Sweda nadhi sub basin at Namakkal and Salem Districts	2.47	Works in Progress
40	Construction of Check dam across Amaravathi river at Thalakkarai village in	4.14	Works in Progress

	Amaravathi sub basin at Dharapuram Taluk of Tiruppur District		
41	Construction of Check dam across Amaravathi river at Puduppai village in Amaravathi sub basin at Dharapuram Taluk of Tiruppur District	6.23	Works in Progress
42	Construction of Check dam across Amaravathi river at Rajapuram village in Amaravathi sub basin at Aravakurichi Taluk of Karur District	2.86	Works in Progress
43	Construction of Check dam across Nanganjiyar at Javvadhupatti Pudur village (near Karuppanna sami Kovil) in Amaravathi sub basin at Oddan chatram Taluk of Dindigul District	1.11	Works in Progress
44	Construction of Check dam across Amaravathi river at Salaithurai in Mambadi Village in Amaravathi sub basin at Dharapuram Taluk of Tiruppur District	4.19	Works in Progress
	Total	**169.28**	

Bed dams

(Rs. in crore)

Sl. No.	Name of work	Esti mate	Stage of work
1	Construction of Bed dam across Vaigai River to feed Lower Nattarkal and 16 tanks near Valasai at Pogalur Taluk of Ramanathapuram District	19.86	55% of works completed
2	Construction of Bed dam across Vaigai River to feed 36 tanks through Koothangal supply channel near Kamuthagudi village in Paramakudi and Mudukulathur Taluks of Ramanathapuram District	19.70	20% of works completed
3	Construction of Bed dam across Vaigai river to feed 14 tanks near Thelichathanallur village in Paramakudi Taluk of Ramanathapuram District	19.00	27% of works completed
4	Construction of Bed dam across Vaigai River to feed Parthibanur Big and Small tank, Vannikudi tank and other two tanks at Athanur village in Manamadurai Taluk of Sivagangai District	16.00	Works completed
	Total	**74.56**	

Grade walls

(Rs. in crore)

Sl. No.	Name of work	Esti mate	Stage of work
1	Construction of a Grade Wall across Cauvery river at mile 28/68 to feed Koothur Channel and Old Maharajapuram Channel at Koothur village in Thiruvaiyaru Taluk of Thanjavur District	13.40	75% of works completed
2	Construction of a Grade Wall across Kudamurutty river at mile 39/0-100 and at 40/1 to feed Sorudaiyan Channel and Ayyanarmathur Channel in Thiruchotruthurai village in Thiruvaiyaru Taluk of Thanjavur District	11.35	70% of works completed
3	Construction of a Grade Wall across Kudamurutty river at mile 30/2 to feed Konerirajapuram Supplemental channel and Konerirajapuram channel at Konerirajapuram village in Thiruvaiyaru Taluk of Thanjavur District	7.67	60% of works completed

4	Construction of a Grade wall across Vennar river at mile 30/1 to restore the Theoretical bed level and to feed Rettaivoikkal and Aathuvoikkal at Piramanpettai village in Thanjavur Taluk and District	7.13	85% of works completed
5	Construction of a Grade wall across Vennar river at mile 56/5-6 to maintain the Theoretical bed level to feed Samanthana Cauvery channel in Ukkadai village of Papanasam Taluk of Thanjavur District	4.10	90% of works completed
6	Construction of a Grade wall across Cauvery river at mile 49/5 to feed New Umayalpuram channel in Ramanujapuram village of Papanasam Taluk of Thanjavur District	3.56	75% of works completed
7	Construction of a Grade wall across Pamaniyar river at mile 87/05 to maintain the Theoretical bed level to feed Kandaparichanar main channel at Siramelkudi village in Pattukkottai Taluk of Thanjavur District	3.55	95% of works completed

8	Construction of a Grade wall across Palavar river at LS 35.40 km at Arasalur village in Thiruvidaimaruthur Taluk of Thanjavur District	1.64	80% of works completed
9	Construction of a Grade wall across Cauvery river at LS 106.60 km to feed A 80 - Old Kanjanur channel, A 79 - Namachivayapuram, A 81 - New Kanjanur Channel, in Manaloor village of Thiruvidaimaruthur Taluk of Thanjavur District	1.19	Works completed
10	Construction of a Grade wall across Manniyar river at mile 65/7-4450 to feed Manakathan Channel and Aliyan Channel in Koothanur village of Thiruvidaimarudur Taluk of Thanjavur District	0.74	85% of works completed
11	Construction of a Grade wall across Manniyar river at mile 68/6 to feed Melaraman channel, Kondayan channel, Kilimangalam channel, Keelaraman channel and Manakunnam channel in Kuruchi village of Thiruvidaimarudur Taluk of Thanjavur District	0.69	90% of works completed
	Total	**55.02**	

Artificial Recharge Schemes

(Rs. in crore)

Sl. No	Name of work	Esti mate	Stage of work
1	Construction of sub surface dyke across Palar river near Palur village in Chengalpattu Taluk of Kancheepuram District	16.83	Works to be takenup
2	Construction of 1335 Artificial recharge shafts in Cauvery and Vennar Sub Basins in Tiruvarur District	19.82	95% of works completed
3	Construction of Artificial Recharge Well structures in Cheyyar Sub basin in Kancheepuram District (3 tanks - Perunagar, Visoor and Serpakkam)	1.36	Works in Progress
4	Construction of Artificial Recharge Well structures in Cheyyar - Kiliyar Sub basin in Tiruvannamalai District (3 tanks - Thirupanamur, Nammandi and Perungattur)	1.34	Works in Progress
5	Construction of Artificial Recharge Well structures in Nallavur Sub basin (4 tanks)	1.81	Works in Progress
6	Construction of Artificial Recharge Well structures in Gomukhi Sub basin (3 tanks)	1.34	Works in Progress

7	Construction of Artificial Recharge Well structures in Varahanadhi Sub basin (6 tanks)	2.56	Works in Progress
8	Construction of Artificial Recharge Well structures in Koundanyanadhi Sub -Basin in Vellore District (2 tanks – Katpadi and Karigiri)	0.95	Works in Progress
9	Construction of Artificial Recharge Well structures in Kosasthalaiyar Sub –Basin in Vellore District (5 tanks - Bagaveli, Maruderi, Sumai thangi, Valluvambakkam and Nagaleri)	2.41	Works in Progress
10	Construction of Artificial Recharge Well structures in Thurinjalar Sub basin in Tiruvannamalai District (7 tanks - Aradapattu, Su.Andapattu, Pavithram, Mallavadi, Mathulampadi, Nookampadi and Somasipadi)	3.54	Works in Progress
11	Construction of Artificial Recharge Well structures in Cooum Sub basin of Tiruvallur District (4 tanks - Cooum tank, Kadambattur tank, Kesavanallathur tank and Satharai tank)	1.20	Works in Progress
12	Construction of Artificial Recharge Well structures in South Vellar Sub basin in Tiruchirappalli District	1.44	Works in Progress

	(3 tanks - Valanadu, Pannaiperiyakulam and Nellikulam)		
13	Construction of Artificial Recharge Well structures in Chinnar Sub basin in Perambalur District (3 tanks Annamangalam, Keelapuliyur and Elumoor)	1.50	Works in Progress
14	Construction of Artificial Recharge Well structures in Upper Vellar Sub basin in Salem District (11 tanks – Puthiragoundampalayam, Erammasamuthiram, Chinnamasamuthiram, Sarvoy, Deviyakurichi, Thalaivasal, Puthur, Thiyaganur, Aragalur, Periyeri and Sitheri)	5.37	Works in Progress
	Total	**61.47**	

Rehabilitation of Anicuts

(Rs. in crore)

Sl. No	Name of work	Estimate	Stage of work
1	Rehabilitation of Sethiathope (Regulator) Anicut including Electrical hoisting arrangements in Chidambaram Taluk of Cuddalore District	23.65	40% of works completed

2	Rehabilitation of Araniyar Anicut at Uthukottai in Araniyar sub basin of Tiruvallur District	3.42	Works in Progress
3	Rehabilitation of anicut across Thondiyar river near Rettanai Village in Varahanadhi sub basin at Tindivanam Taluk of Villupuram District	7.90	Works in Progress
4	Rehabilitation of Thamaraipakkam Anicut and replacement of shutters in Thamaraipakkam anicut across Kosasthalaiyar river in Kosasthalaiyar sub basin of Tiruvallur District	13.83	Works in Progress
5	Rehabilitation of Thandarai anicut and its Main Canal in Cheyyar-Kiliyar sub basin at Cheyyar Taluk of Tiruvannamalai District	7.15	Works in Progress
6	Rehabilitation of left over tanks and anicuts in Chinnar sub basin in Perambalur District	2.01	Works in Progress
7	Rehabilitation of Sundakkampalayam anicut of Amaravathi River system in Amaravathi sub basin at Aravakurichi Taluk of Karur District	1.33	Works completed

8	Rehabilitation of Kottur Avarampatti anicut, Venkatrama Iyyengar Anicut in Amaravathi sub basin at Dindugul Taluk and District	0.89	Works completed
	Total	**60.20**	

Rehabilitation of Regulators

(Rs. in crore)

Sl. No	Name of work	Estimate	Stage of work
1	Rehabilitation of Pelandurai Regulator across Vellar River at Pelandurai in Cuddalore District	17.50	20% of works completed
2	Rehabilitation and Modernisation of damaged dividing wall near Old head Sluice of Lakshmipuram Anicut and Apron of Supply Channel feeding to Perumbedu Tank in Araniyar sub basin of Tiruvallur District	1.00	Works in Progress
3	Repairs to Sluice, cross masonry, flood protection walls and renewal of shutters in irrigation canals of Palar Porandalar,	0.90	Works in Progress

	Vardhamanadhi and Kudhirayar systems in Amaravathi sub basin at Palani Taluk of Dindigul District		
4	Repairs and renewal of head sluice and scour vent shutters of Anicuts in Kodaganar river, Santhanavarthini river in Amaravathi sub basin at Ottanchathiram Taluk of Dindigul District	0.49	Works in Progress
	Total	**19.89**	

Flood Protection Works

To avoid flooding in Chennai City during monsoon, the following works are being carried out under Jawaharlal Nehru National Urban Renewal Mission Scheme. (JNNURM)

(Rs. in Crore)

Package	Name of work	Estimate	Stage of work
I	Improvement to Kodungaiyur drain, Otteri nullah and Kolathur-Madhavaram diversion channel	63.05	70% of works completed
II	Improvement to Arumbakkam-Virugambakkam drain and construction of diversion	83.89	46% of works completed

	channel from Maduravoyal to Cooum		
III	Improvement to North Buckingham canal	110.05	83% of works completed
IV	Improvement to Central Buckingham canal from Cooum South Lock to Adyar North Lock	68.62	Works in Progress
V	Improvement to South Buckingham canal from Adyar South Lock to Okkiyam Maduvu (from 0 m to 10500 m) Reach I and II	46.86	97% of works comlpeted
VI	Improvement to South Buckingham canal from Okkiyam Maduvu to Muttukkadu backwater (from 10500m to 23500m)	78.14	94% of works completed
VII	Improvement to Veerangal Odai and Short cut Diversion Drainage for Velachery Tank	82.05	72% of works completed
VIII	Improvement to Ambattur tank	19.63	82% of works completed
IX	Improvements to Porur Tank Surplus Drainage	26.96	Works in Progress
X	Formation of new diversion channel to Korattur Tank surplus course in Tiruvallur District	27.66	Works in Progress

Coastal Protection Works

(Rs. in crore)

Sl. No	Name of work	Estimate	Stage of work
1	Construction of Groynes, RMS walls, Spurs, Training walls etc., for coastal protection in Cuddalore, Kanniyakumari, Nagapattinam, Tirunelveli, Thoothukudi and Villupuram Districts	166.12	Works in Progress
2	Construction of series of 10 numbers of Groynes from Ennore to Ernavoorkuppam LS 19/000 to 15/200 km along coastal area in Madhavaram Taluk of Tiruvallur District	31.82	Study for obtaining Coastal Regulation Zone clearance is in progress
	Total	**197.94**	

13TH FINANCE COMMISSION GRANTS-IN-AID PROGRAMME

Districtwise Coastal Protection Works in progress

(Rs. in crore)

Sl. No	Name of Work	Estimate	Stage
I.	**Kanniyakumari District**		
1.	Reformation of RMS wall at Poothurai in Vilavancode Taluk	2.09	60% of works completed
II.	**Nagapattinam District**		
2.	Collecting field bed levels along the coast covering required stretch and seaward covering breaker zone and collection of other details like tidal current, along shore current etc., at Vanagiri kuppam, Thirumullai vasal, Seruthur and Samanthapettai in Sirkali Taluk	0.42	Report from Anna malai University, Chidam baram is under scrutiny
3.	Construction of RMS wall for a length of 950 m and construction of groynes at Vanagirikuppam of Sirkali Taluk	16.98	95% of works completed
4.	Construction of RMS wall for a length of 500 m and construction of groynes at Vanagirikuppam of Sirkali Taluk	16.97	95% of works completed

III.	**Thoothukudi and Tirunelveli Districts**		
5.	Collecting field bed levels along the coast covering required stretch and seaward covering breaker zone and collection of other details like tidal current, alongshore current etc. at Punnakayal village of Tiruchendur Taluk of Thoothukudi District and at Idinthakarai and Uvari in Radhapuram Taluk of Tirunelveli District.	0.25	Bathymetry survey by IIT, Chennai has been completed.
6	Construction of Training wall at Punnakayal in Tiruchendur Taluk of Thoothukudi District	8.47	55% of works completed
	Total	**45.18**	

District-wise Coastal Protection Works to be taken up

(Rs. in crore)

Sl. No.	Name of work	Esti-mate	Stage
I.	**Cuddalore District**		
1.	Construction of RMS wall at Devanampattinam (LS 800 m - LS 1220 m) in Cuddalore Taluk	1.80	Final clearance from National Coastal Zone Manage
2.	Construction of RMS wall for a length of 650 m from right bank of	2.54	

	Pennaiyar mouth to Thazhanguda village in Cuddalore Taluk		ment Authority is awaited
3.	Construction of RMS wall for a length of 210 m from left bank of pennaiyar mouth to Subauppalavadi village in Cuddalore Taluk	0.84	Final clearance from National Coastal Zone Manage ment Authority is awaited
4.	Construction of RMS wall at Devanampattinam (LS 1220m - LS 2140m) in Cuddalore Taluk	3.90	
II.	**Kanniyakumari District**		
5.	Construction of RMS wall at Gap between Eraviputhanthurai and Vallavilaithurai for a length of 1250 m of Vilavancode Taluk	2.81	Agreement to be drawn
6.	Construction of RMS wall for a length of 520 m at Kesavanputhanthurai of Agastheeswaram Taluk	1.31	Tender under scrutiny
7.	Construction of RMS wall for a length of 460 m at Kotilpadu of Kalkulam Taluk	3.24	Agreement to be drawn
8.	Construction of RMS wall at Melmidalam of Vilavancode Taluk	0.69	Tender under scrutiny
III.	**Thoothukudi District**		
9.	Construction of Groyne at Keelavaippar in Vilathikulam Taluk	11.75	Technical design from IIT,

			Chennai is awaited
10.	Construction of Groyne at Vembar in Vilathikulam Taluk	14.20	Tender called for
11.	Construction of Groyne at Veerapandiapattinam in Tiruchendur Taluk	10.64	Tender under scrutiny
12.	Construction of Groyne at Kallamozhi in Tiruchendur Taluk	7.70	
13.	Construction of Groyne at Periyathalai in Tiruchendur Taluk	25.20	
IV	**Villupuram District**		
14.	Construction of Sea wall from LS 1850 m to 2470 m and LS 2710 m to LS 3090 m (1000 m) in Chinnamudaliyar Chavadi Village in Vanur Taluk	2.80	Final clearance from National Coastal Zone Management Authority is awaited
15.	Construction of series of 2 Groynes (5 and 6) in Mudaliyar Chavadi in Vanur Taluk	9.65	
16.	Construction of series of 3 Groynes in Bommaiyarpalayam in Vanur Taluk	6.90	
17.	Construction of series of 5 Groynes in Sodhanai kuppam in Vanur Taluk	4.72	
	Total	**110.69**	

Parks and Tourism Development works

(Rs. in crore)

Sl. No	Name of work	Estimate	Stage
1	Development of Park arrange ments at Jederpalayam anicut in Paramathi-Velur Taluk of Namakkal District	4.56	30% of works completed
2	Development of Kallanai Tourist place in Thanjavur District	4.08	80% of works completed
3	Development of Park in Mukkombu at Srirangam Taluk of Tiruchirappalli District	3.10	95% of works completed
4	Provision of basic facilities in Mettur Dam of Salem District	0.61	40% of works completed
5	Provision of basic infrastucture facilities in Ponnaniar Dam of Karur District	0.50	60% of works completed
	Total	**12.85**	

Memorials and Buildings

(Rs. in crore)

Sl. No	Name of work	Estimate
1	Renovation of Dormitory Block - II at Thekkady	0.50
2	Construction of Sub Division Office with Section Offices for Planning and Design Sub Division, Nagercoil in PWD campus at Nagercoil	0.27
3	Construction of Environmental Sub Division Office with Section Offices at Madurai	0.27

4	Construction of Section officer's Quarters at Amaravathi Nagar in Udumalaipettai Taluk of Tiruppur District	0.13
5	Construction of Irrigation Assistant quarters No.1 and 2 (Twin Type) for Lower Anicut Section at Anaikarai in Cuddalore District	0.11
6	Construction of Irrigation Assistant quarters (Twin type) at Sathanur dam in Thandarampattu Taluk of Tiruvannamalai District	0.11
7	Construction of Irrigation Assistant quarters (Twin type) at Srimushnam town in Kattumannarkoil Taluk of Cuddalore District	0.11
8	Construction of Irrigation Assistant quarters (Twin type) in Thanjavur Town of Thanjavur District	0.11
9	Construction of Section office building for Mettur Canal Section at Kullampatty in Sankagiri Taluk of Salem District	0.07
10	Construction of a Section office building at Muthupettai in Thiruthuraipoondi Taluk of Thiruvarur District	0.07
11	Construction of Section office building at Amaravathi Nagar in Udumalaipettai Taluk of Tiruppur District	0.07
12	Construction of Section office building at Sathyamangalam in Erode District	0.07
13	Construction of Anthiyur Section office building in Anthiyur Taluk of Erode District	0.07

14	Purchase of New Staff car for Superintending Engineer, Middle Cauvery Basin Circle, Tiruchirappalli	0.06
15	Purchase of a New Staff Car for Superintending Engineer, Lower Cauvery Basin Circle, Thanjavur	0.06
	Total	**2.08**

Managing Climate Change in Cauvery delta

(Rs. in crore)

S. No	Name of Work	Estimate
1	Infrastructure Improvements and Reconstruction works in Harichandranadhi	226.54
2	Infrastructure Improvements and Reconstruction works in Adappar river	115.17
3	Infrastructure Improvements and Reconstruction works in Vellaiyar river	86.46
4	Infrastructure Improvements and Reconstruction works in Pandavaiyar river	30.61
5	Infrastructure Improvements and Reconstruction works in Valavanar Drain	38.20
6	Infrastructure Improvements and Reconstruction works in Vedaraniyam Canal and Uppanar drain	19.99

7	Design, Supply, installation, testing & commissioning of various pumping machinery including associated electrical, mechanical and civil works on turn-key basis	11.06
	Total	**528.03**

Roads and Bridges

(Rs. in crore)

Sl. No	Name of work	Esti mate	Stage
1	Formation of Service Road on the right side bund of Vaigai River in Paramakudi Town at Ramanathapuram District	6.50	Tender under scrutiny
2	Construction of a Causeway across Cooum river at Choranchery Village in Poonamallee Taluk of Tiruvallur District	1.20	Tender under scrutiny
3	Construction of a High level bridge across river Kollidam at mile 45/5 + 50 m in Azhagiamanavalam village to connect left bank of Kollidam with Mela Ramanallur Village in Ariyalur Taluk and District	48.00	15% of works completed
4	Construction of bridge at Ambalavarkattalai to Sundagudi road in Km 3/2 across Maruthaiyaru river (Km 51/0) in Ariyalur Taluk and District	10.00	90% of works completed
5	Construction of bridge, retaining wall and road with	2.94	22% of works

	B.T. surface from Kalimar Bridge to Symon colony bridge at Colachel in Kanniyakumari District		completed
6	Construction of a High Level bridge at Vayalur road across Kudamurutty River in Tiruchirappalli District	2.80	Works completed
7	Construction of a Causeway across Kuthiraiyar river and Construction of a Culvert in Panchanthangi supply Channel near Myladumparai in Pappampatti village of Palani Taluk in Dindigul District	0.63	90% of works completed
8	Reconstruction of Bridge at mile 54/6-350 of LBP Main canal in Perundurai Taluk of Erode District	0.48	65% of works completed
9	Construction of High level Bridge across Kuranganpallam odai in Panapalayam at Unjalur village of Erode Taluk and District	0.43	60% of works completed
10	Construction of Bridge across Unjalur Distributory at mile 6/6-50 of Avalpoondurai village of Erode Taluk and District	0.25	80% of works completed
11	Construction of bridge across Pullambadi main channel at mile 49/3 in Kattur village of Ariyalur Taluk and District	0.12	Works completed
	Total	**73.35**	

Environmental Protection works

(Rs. in crore)

Sl. No	Name of work	Estimate	Stage
1	Setting up of 4 Diffusers in the Ooty Lake	1.50	Alternate proposal based on latest technology under consideration
	Total	**1.50**	

Innovative Schemes

(Rs. in crore)

Sl. No	Name of work	Estimate
1	Bank protection works to the sliding portion of both banks of Vennar river using Gabion structure in between mile 49/1 to 49/7 in Kalanjeri of Thanjavur District	2.00
	Total	**2.00**

In addition to the above schemes, various schemes have been identified with due regard to the priority. The schemes include excavation of new supply channels, construction of Check dams, Grade walls and Diaphragm walls, Rehabilitation of regulators, tanks, canals, anicuts, Groynes and Anti sea erosion structures. These schemes are proposed to be taken up in 2014-15 under State funds and

NABARD assistance at a total cost of Rs.178.65 crore as below:

New Supply Channels

(Rs. in crore)

Sl. No	Name of Work	Estimate
1	Diversion of flood waters of Betamugilampallam to Kesarigulihalla reservoir in Palacode Taluk of Dharmapuri District	1.00
	Total	**1.00**

Check dams

(Rs. in crore)

Sl. No	Name of Work	Estimate
1	Construction of check dam across Tamiraparani River near Mukkani in Srivaikuntam Taluk of Thoothukudi District	25.75
2	Construction of check dam across River Kosasthalaiyar near Pattaraiperumpudur village in Tiruvallur Taluk and District	25.00
3	Construction of check dam across Ayyar river in Chithambur village of Musiri taluk in Tiruchirappalli District	6.45
4	Construction of Pulankulam check dam across Santhanavarthini river in Vembarpatti village of Dindigul Taluk and District	4.00

5	Construction of Nedunkulam check dam across Santhanavarthini river in Avilipatti village of Dindigul Taluk and District	3.50
6	Construction of check dam across Nandiyar river in Vellanur village of Lalgudi Taluk in Tiruchirappalli District	3.20
7	Construction of check dam across Uppar river in Irungalur village of Mannachanallur Taluk in Tiruchirappalli District	3.20
8	Construction of check dam across Ariyar river in Ammapettai village of Srirangam Taluk in Tiruchirappalli District	3.06
9	Construction of check dam across Karaipottanar river in Nayaganallur village of Thottiyam Taluk in Tiruchirappalli District	2.94
10	Construction of check dam across Ayyar river near Veeramachanpatty village of Thuraiyur Taluk in Tiruchirappalli District	2.60
11	Construction of check dam across Santhanavarthini river in Kombaipatti village of Dindigul Taluk and District	1.75

12	Construction of check dam across Dombatchi river in Malaiyadipatty village of Manapparai Taluk in Tiruchirappalli District	1.66
13	Construction of Check dam across Thalugai river in Naganallur village of Thuraiyur Taluk in Tiruchirappalli District	1.42
14	Construction of an Artificial Recharge structure across Varamoongilpallam odai in S.F.No.287 of Narasingapuram village in Coimbatore South Taluk of Coimbatore District	1.06
15	Construction of an Artificial Recharge structure across Sullipalam odai in S.F.No.574 of Thennamanallur village in Coimbatore South Taluk of Coimbatore District	1.06
16	Construction of Check dam across Anaimaduvupallam near Boluvampatti Reserve Forest area in Kalikkanayakkanpalayam village in Coimbatore South Taluk of Coimbatore District	0.93
17	Construction of Check dam across Kannuthu river in A.Reddiyapatty village near Vaiyampatty of Manapparai Taluk in Tiruchirappalli District	0.90

18	Construction of a Check dam across Kumuttipatty Nadhi in S.F.No.77 of Karunchami goundanpalayam village in Coimbatore South Taluk of Coimbatore District	0.79
19	Construction of Check dam across Koraiyaru river in Kannivadugapatty village of Marungapuri Taluk in Tiruchirappalli District	0.70
20	Construction of Check dam across Periyapallam in S.F.No.10 of Kalampalayam village in Mettupalayam Taluk of Coimbatore District	0.66
	Total	**90.63**

Grade walls

(Rs. in crore)

Sl. No	Name of Work	Estimate
1	Construction of grade wall across Cauvery river at LS 104.48 Km to feed Manalur channel in Tirumangalakudi village of Thiruvidaimaruthur Taluk in Thanjavur District	1.16
2	Reconstruction of grade wall across Veeracholan river at LS 131.00 Km in Vasishtacheri Village of Tharangambadi Taluk in Nagapattinam District	0.95
	Total	**2.11**

Diaphragm wall

(Rs. in crore)

Sl. No	Name of Work	Estimate
1	Construction of Diaphragm wall across Pennaiyar river between Perangiyur village in Ulundurpet Taluk and Pidagam village in Villupuram Taluk of Villupuram District	12.63
	Total	**12.63**

Regulators

(Rs. in crore)

Sl. No	Name of Work	Estimate
1	Construction of a regulator across Kanthaparichanar drain to prevent sea water intrusion in Thiruthuraipoondi Taluk of Tiruvarur District	3.00
2	Reconstruction of Sirupuliyur regulator across Nattar river at mile 78/1-330 in Polagudi village of Nannilam Taluk in Thiruvarur District	1.14
	Total	**4.14**

Rehabilitation of Tanks, Canals and Anicuts

(Rs. in crore)

Sl. No	Name of Work	Estimate
1	Rehabilitation of Tanks, Anicuts and Supply channels in Musiri, Thottiyam and Thuraiyur Taluks in Tiruchirappalli District	8.84
2	Repairs, Renovation and Restoration of Adhanur tank, Sikkathambur tank, Thuraiyur Big tank, Keerambur tank, Nagalapuram tank and Maruvathur tank in Thuraiyur Taluk of Tiruchirappalli District.	5.18

3	Protecting the side banks of Chunkan Odai and improvements at Erappaiyar to feed Poigai dam in Thovalai Taluk of Kanniyakumari District	3.25
4	Modernisation and Restoration of 14 tanks and 2 anicuts in Uppar, Nandhiyar and Marudaiyar sub basins in Perambalur District	2.22
5	Rehabilitation of Pallapatti old anicut and Kottankulam Anicut across Pallar at Pallapatti village and Kottankulam Kanmoi surplus course of Kottampatti village of Melur Taluk in Madurai District	1.25
6	Rehabilitation of Kottayadi Channel from LS. 0/0 Km to 5/800 Km and Restoration of channel from LS 5/800 Km to 6/700 Km under Nanchil Nadu Puthanar Channel system in Thamaraikulam village of Agastheeswaram Taluk in Kanniyakumari District	1.15
7	Rehabilitation of Kuniyamuthur anicut and its supply channel from LS 0/0 Km to 2/0 Km in Coimbatore South Taluk of Coimbatore District	0.75
8	Rehabilitation of Swamimalai bed dam across Cauvery River at mile 53/000 in Swamimalai village of Kumbakonam Taluk in Thanjavur District	0.75
9	Rehabilitation of Amoor Tank in Ponneri Taluk of Tiruvallur District	0.70

10	Rehabilitation of Alathur Anicut, supply channel and feeding tanks in Chengam Taluk of Tiruvannamalai District	0.45
11	Rehabilitation of Thandarai Anicut in Tiruvannamalai Taluk and District	0.60
12	Rehabilitation of Palavar Head Sluice with syphon arrangements at mile 0/0 in Nagakudi and Melamaruthukudi villages of Papanasam Taluk in Thanjavur District	0.60
13	Rehabilitation of South Bank of Andipalayam anicut and its supply channel in Palladam Taluk of Tiruppur District	0.60
14	Rehabilitation of Krishna Iyangar channel in Mettupalayam Taluk of Coimbatore District	0.30
	Total	**26.64**

Groynes / Anti sea erosion works

(Rs. in crore)

Sl. No	Name of Work	Estimate
1	Anti sea erosion work in Rameswaram town, Seeniappadargah Mullimunai and Karankadu	17.50
2	Providing groynes at Mandaikadupudur village in Kanyakumari District	7.82
	Total	**25.32**

De-silting of Reservoirs:-

In the "**Hon'ble Chief Minister's Vision 2023**", priority has been given to improve the existing storage capacity of the Reservoirs. In consonance with this it is proposed to undertake a detailed study to de-silt Vaigai, Pechipparai, Mettur, Amaravathy reservoirs and Srivaikundam Anicut and this task is being entrusted to **M/s. WAPCOS Ltd.**, a Government of India undertaking which is well versed in the preparation of Detailed Project Report (DPR), Rapid Environmental Impact Assessment (REIA) report, preparation of tender documents/evaluation, Project Management Consultancy(PMC) services and post project evaluation and this study will be completed during this year and that de-silting work will be done based on the recommendation of **M/s. WAPCOS Ltd.**,

6.0 INTER STATE WATER ISSUES

6.1 Cauvery Water Dispute

6.1.1 Constitution of Tribunal:-

As per the orders of the Supreme Court dated 04.05.1990, the Government of India constituted the Cauvery Water Disputes Tribunal on 02.06.1990, since the Cauvery Water issue could not be resolved even after negotiations through 26 meetings, both bilaterally and under the auspices of the Central Government, for over 23 years.

6.1.2 Interim Order of the Tribunal:-

The Interim Order on the petition filed by Tamil Nadu was pronounced by the Cauvery Water Disputes Tribunal (CWDT) on 25.06.1991, directing Karnataka to release water so as to ensure 205 TMC.ft. at the Mettur reservoir as per the

prescribed monthly / weekly pattern and of this, 6 T.M.C.ft. was to be given to Karaikkal area of the Union Territory of Puducherry; also, the State of Karnataka shall not increase its area under irrigation beyond 11.20 lakh acres as on June 1990; further the Interim Order will remain operative till the final adjudication of the dispute. The interim order was published in the Gazette of the Government of India on 10.12.1991.

6.1.3. Scheme for implementation of Interim Order

A "Scheme" to give effect to the decision of the Tribunal, dated 25.06.1991 was notified in the Gazette by the Government of India on 11.08.1998. As per this Scheme, a Cauvery River Authority (CRA) headed by the Prime Minister of India was constituted with the Chief Ministers of all the Party States as Members. To assist the Authority, a Cauvery Monitoring

Committee (CMC) headed by the Secretary to Government of India, Ministry of Water Resources, with the Chief Secretaries and Chief Engineers of the basin States as Members was also constituted. Seven meetings of the Authority were only held over a period of 15 years and it did not ensure the stipulated monthly releases to Tamil Nadu as per the Interim Order. However it ceased to exist from 19.02.2013 i.e. after the notification of the Final Order.

6.1.4. Final Award of the Tribunal

The Tribunal after going through all legal procedures such as examining all the documents and statistics of the case, the affidavits of the Expert Witnesses and their cross-examination and hearing the arguments putforth by the party States, pronounced its Final Decision on 05.02.2007, under section 5(2) of the Inter State River Water Disputes Act, 1956.

6.1.5. The salient features of the Final Award are:

- The yield of the Cauvery at the Lower Coleroon Anicut site on the basis of 50% dependability is 740 TMC.ft. as per the report of the Cauvery Fact Finding Committee.

- The allocation made among the party States at 50% dependability is as below:

Tamil Nadu (in TMC.Ft.)		.
At Billigundulu or any other point at the common border between Karnataka and Tamil Nadu	182	
Flow available in Tamil Nadu between Billigundulu and Mettur	25	**419**
Total flow at Mettur	207	
Flow available in Tamil Nadu below Mettur	212	

Total allocation for Tamil Nadu	419	
Karnataka		**270**
Kerala		
Kabini sub-basin	21	**30**
Bhavani sub-basin	6	
Amaravathi sub-basin	3	
Total allocation for Kerala	30	
Puducherry		7
Inevitable surplus		4
Environment Protection (At Billigundulu or any other agreed point at the common border between Karnataka and Tamil Nadu)		10
Grand Total		**740** TMC.ft.

- As per the Final Order, the flow that will be made available at Mettur will be (182 + 25 + 10 TMC for Environmental Protection) 217 TMC.ft.

- The use of Ground Water by any State shall not be

reckoned as use of water of the River Cauvery.

- Until the Kerala Government takes up projects to utilize allocated share of water in full, the unutilized flows will be permitted to be used by Tamil Nadu.

- The Tribunal has also suggested constitution of a Cauvery Management Board and Cauvery Water Regulation Committee to effectively implement the Final Order.

6.1.6. SLPs (Civil Appeals) in the Supreme Court

The States of Karnataka and Kerala filed Special Leave Petitions in the Supreme Court in April, 2007, against the Final Order of the Tribunal. A Special Leave Petition was also filed by Tamil Nadu in the Supreme Court in May, 2007, against certain aspects of the Final Order of the

Tribunal. In the SLP, Tamil Nadu has prayed for restoring the age old kuruvai crop area in the Cauvery Delta which has not been considered by the Tribunal and the second crop area in other age old systems, and to reduce the overall irrigation efficiency from 65% to 60% and consequently allocate additional quantity of water. In the SLPs filed in the Supreme Court, the State of Karnataka has filed documents in 26 volumes and the State of Kerala in 15 volumes. To counter this, the State of Tamil Nadu has filed documents in 13 volumes as per the legal advice of the Advocates. These SLPs (Civil Appeals) were posted for "directions" on 12.03.2014, but did not come up on that date. It is expected that these civil appeals will be taken up soon for hearing.

6.1.7. Petitions Filed before the Tribunal under Sec. 5(3)

All the Party States and the Government of India have filed petitions in the Tribunal under section 5(3) of the ISWD Act, 1956 seeking explanation / guidance on the Final Order. The Tribunal in its order dated 10.07.2007 ordered that only after the Special Leave Petitions are heard and disposed of by the Supreme Court, the petitions filed under section 5(3) of the Act will be heard by the Tribunal.

6.1.8. The Government of Tamil Nadu filed an I.A. in the Supreme Court on 1.9.2011 with a request to clarify that there would be no impediment for the Cauvery Water Disputes Tribunal in proceeding with the applications filed by the party States notwithstanding the pendency of the Civil Appeals and direct the Tribunal to dispose of the pending applications filed by the party States and the Government of India. This I.A. is still pending.

6.1.9. The Government of Tamil Nadu on 16.3.2012, filed a Civil Miscellaneous Petition in the Cauvery Water Disputes Tribunal praying to take up early hearing of the petitions under section 5(3) filed by the party States and the Government of India. When the Tribunal listed this for hearing in April 2012, the Chairman of the Tribunal resigned on health grounds and only after a new Chairman is appointed, this can be proceeded further. The Hon'ble Chief Minister on 19.4.2012 addressed the then Hon'ble Prime Minister for filling up the post of Chairman, Cauvery Water Disputes Tribunal. The Ministry of Water Resources, GOI, on 13.05.2014 has notified the appointment of Dr. Justice Balbir Singh Chauhan, judge of Supreme Court as Chairman of the Cauvery Water Dispute Tribunal. He assumed charge as Chairman of the Tribunal on 21.05.2014. The CWDT in its order dated: 15.07.2014, has

ordered that it is desirable that the state of Tamil Nadu may file a fresh application or press I.A. No.11 filed by it in the Hon'ble Supreme Court in Civil Appeal No. 2453/2007 and get an appropriate direction that this Tribunal may proceed with the application under section 5 (3) of the Act, 1956 and inform the Tribunal. Following this order, the Hon'ble Chief Minister has ordered to file an application in the Supreme Court. Accordingly, the Government of Tamil Nadu has filed an Interlocutory Application in the Supreme Court and it is likely to be taken up for hearing soon.

6.1.10. Efforts taken to Constitute the Cauvery Management Board (CMB) and the Cauvery Water Regulation Committee (CWRC).

Following the notification of the Final Order of the Tribunal in the Gazette of India on 19.02.2013, the Hon'ble Chief Minister addressed the then Prime

Minister on 22.02.2013 and 11.03.2013 to place in position the Cauvery Management Board and the Cauvery Water Regulation Committee as recommended by the Tribunal in its Final Order.

6.1.11. Since the Central Government did not constitute the Cauvery Management Board and the Cauvery Water Regulation Committee, as per the orders of the Hon'ble Chief Minister, an I.A. (No. 5 of 2013) was filed in the Supreme Court on 18.03.2013 to direct the Government of India to constitute the above machinery before the end of April, 2013. Pending constitution of the Cauvery Management Board, the Hon'ble Supreme Court on 10.05.2013 ordered that a pro tem Supervisory Committee be constituted as a pro tem measure for implementation of the Final Order dated February 5, 2007 as notified on February 19, 2013, consisting of the Secretary, Union

Ministry of Water Resources as Chairman and the Chief Secretaries of the respective States of Karnataka, Tamil Nadu, Kerala and Union Territory of Puducherry as Members.

6.1.12. The Government of India, based on the aforesaid order of the Supreme Court, notified the constitution of the pro tem Supervisory Committee on Cauvery in its gazette on 22.05.2013, consisting of the Secretary, Ministry of Water Resources, Government of India, as Chairman, the Chief Secretaries to the State Governments of Karnataka, Tamil Nadu, Kerala and the Union Territory of Puducherry and the Chairman, Central Water Commission as Members and the Chief Engineer, Central Water Commission as the Member-Secretary.

6.1.13. The Hon'ble Chief Minister on 17.05.2013 urged the then Prime Minister to instruct the Ministry of

Water Resources to constitute the Cauvery Management Board and the Cauvery Water Regulation Committee, immediately. Following this, the Hon'ble Chief Minister on 02.09.2013 and 03.09.2013 again requested the then Prime Minister, to constitute the Cauvery Management Board and the Cauvery Water Regulation Committee.

6.1.14. This Supervisory Committee has so far held four meetings - on 01.06.2013, 12.06.2013, 15.07.2013 and 08.11.2013. It was found that the Supervisory Committee in these meetings did not take any concrete steps to effectively implement the Final Order of the Tribunal. As ordered by the Hon'ble Chief Minister, an I.A. (I.A. No. 7/2013) was filed in the Supreme Court on 11.11.2013, praying to order the Government of India to constitute the Cauvery Management Board and the Cauvery Water Regulation

Committee as a permanent measure.

6.1.15. When this Application came up for hearing on 03.12.2013, the Supreme Court posted this Application for hearing along with the Civil Appeals.

6.1.16. In the Memorandum presented to the Hon'ble Prime Minister on 03.06.2014, the Hon'ble Chief Minister urged him to order the Ministry of Water Resources, to constitute the Cauvery Management Board and the Cauvery Water Regulation Committee as a permanent measure in order to implement the Final Order of the Tribunal.

6.1.17. Soon after the Chief Minister of Karnataka presented a Memorandum on 10.06.2014 to the Prime Minister, requesting him not to constitute the Cauvery Management Board and the Cauvery Water Regulation Committee, the Hon'ble Chief Minister on 13.06.2014 had

urged the Hon'ble Prime Minister to constitute the Cauvery Management Board & Cauvery Water Regulation Committee immediately as the views expressed by Karnataka have no relevance and should be overruled. Thus the Government of Tamil Nadu is taking continuous efforts for the constitution of the Cauvery Management Board and the Cauvery Water Regulation Committee.

6.1.18. Irrigation season 2013-2014

During the irrigation season 2013-2014, the Mettur Reservoir, was thrown open on 02.08.2013 for irrigation and water was supplied to all irrigation systems.

6.1.19. A contempt petition was filed in the Supreme Court on 25.06.2013 against the Chief Minister of Karnataka and others for willfully disobeying the Final Order dated 05.02.2007 passed by the Cauvery Water Disputes Tribunal, which is a deemed decree of the Supreme Court

following its notification on 19.02.2013. An I.A. was also filed by the Government of Tamil Nadu in the Supreme Court on 25.06.2013 for directing Karnataka to forthwith release water in accordance with the Final Order of the Tribunal.

6.1.20. Other Petitions filed in the Supreme Court

6.1.21. a) I.As filed in 2008-2009 on Hydel Schemes above Mettur

Tamil Nadu has also filed an I.A. in the Supreme Court in November 2008 against the unilateral action contemplated by Karnataka in proceeding with the execution of the Sivasamudram Seasonal Power Scheme and the Megadhathu Hydro Electric Scheme and praying for directions to the Government of India to take up all the Hydel Schemes in Cauvery between KRS and Mettur by the NHPC as a package deal, as already contemplated by them. In this

I.A., an additional affidavit was filed by Tamil Nadu in August, 2009 objecting to the unilateral action of Karnataka in taking up the Sivasamudram Hydro Electric Project. This is pending in Supreme Court.

6.1.22. b) I.A. filed in 2012 to forbear the Summer Irrigation in Karnataka

In order to forbear the Government of Karnataka from drawing water for summer irrigation and to carry over the storage to the next irrigation season so as to help release of water to Tamil Nadu as per the Interim Order, an I.A. was filed on 21.3.2012 in the Supreme Court of India. This is pending in the Supreme Court.

6.1.23. c) I.A. filed in 2012 on Banasurasagar Irrigation project in Kerala

In January, 2012 the Government of Kerala forwarded

a Detailed Project Report in respect of the Banasurasagar Irrigation project in the Kabini Basin, which is already under execution and was under discussion during the deliberations of the Cauvery Water Disputes Tribunal. On examination, it was seen that Kerala is proceeding with this project as originally envisaged by it for utilization of 1.7 TMC.ft. of water for irrigation, and was also contemplating to divert as much as 6 to 10 TMC.ft. westwards through a tunnel to augment power generation in the Kuttiyadi hydro electric project in the adjacent Valarpattinam Basin. The Tribunal in its Final Order had not allowed the westward diversion and allocated only 0.84 TMC ft. for in-basin irrigation under the project. On 12.03.2012, the Government of Kerala was requested, not to proceed with the Banasurasagar Irrigation project in any manner, pending disposal of the Civil Appeals in the Supreme Court

and Reference Petitions in the Tribunal. An I.A. has also been filed in the Supreme Court on 24.04.2012 to restrain the Government of Kerala from proceeding with works in any manner with regard to this project. This is pending in Supreme Court.

6.1.24. d) I.As filed by Tamil Nadu in 2013-2014 to restrain Karnataka from taking up Megadhathu HEP and other schemes

Based on the information published in the media about the Megadhathu Hydroelectric Project and other projects being taken up by the Cauvery Neeravari Nigama Limited the Hon'ble Chief Minister on 02.09.2013 has urged the then Hon'ble Prime Minister requesting him to advise the Government of Karnataka not to take up any schemes including hydro electric projects in the Cauvery Basin of Karnataka without the prior

consent of the Government of Tamil Nadu and also to advise the Ministry of Environment & Forests, Government of India, not to accord clearance to any Projects of Karnataka in the river Cauvery till a permanent monitoring mechanism viz., the Cauvery Management Board is formed. The Prime Minister was also requested to instruct the Ministry of Water Resources to constitute the Cauvery Management Board and the Cauvery Water Regulation Committee, for ensuring the effective implementation of the Final Order of the Cauvery Water Disputes Tribunal. The Chief Secretary on 06.09.2013 and again on 17.09.2013 letters wrote to the Chief Secretary of Karnataka on 06.09.2013 and to the Secretary, Ministry of Water Resources on 17.09.2013 in this regard.

In reply to these, the Secretary, Ministry of Water Resources, in the letter dated 07.10.2013

informed that no DPR of Shivasamudram Run of the River Project or a Hydroelectric Project at Mekedatu has been received in CWC for techno-economic examination / clearance and that action for constitution of the Cauvery Management Board is under consideration of the Ministry of Water Resources in consultation with the Ministry of Law and Justice. On 09.10.2013, the Government of India was again to instruct the Government of Karnataka to furnish the project reports of the above projects and also advise Karnataka not to proceed with such Projects pending disposal of the Civil Appeals by the Supreme Court. These projects are also referred to in the I.A filed on 11.11.2013 in the Supreme Court for directing to constitution the Cauvery Management Board by the Government of India.

Action taken on Karnataka's other schemes:-

When the media reported that Karnataka has planned to execute lift irrigation and modernisation schemes through Cauvery Neeravari Nigama Ltd. the Government of India was requested to advise the Government of Karnataka, to furnish full information of the schemes and also not to proceed with the Tender Notice issued, till the Cauvery Management Board and Cauvery Water Regulation Committee are formed. As no reply was received, as ordered by Hon'ble Chief Minister an I.A . was filed in the Supreme Court on 11.04.2014 to maintain the Status quo ante by the Government of Karnataka till the formation of Cauvery Management Board and Cauvery Water Regulation Committee.

6.1.25. Civil Suit filed by Tamil Nadu in the Supreme Court against Karnataka for claiming compensation due to non-release of water due to

Tamil Nadu by Karnataka in 2012-2013.

The South West Monsoon though set in on 05.06.2012, the rainfall was below normal and did not intensify in the catchment area of Cauvery. The State of Karnataka as usual impounded all the flows in its reservoirs. The supplies due to Tamil Nadu either as per the Interim Order or as per the Distress Sharing Formula evolved by the Central Water Commission and accepted by the Cauvery Monitoring Committee were not released to Tamil Nadu. Tamil Nadu filed an I.A. in the Supreme Court on 21.07.2012 seeking directions to Karnataka to release water as per the Interim Order. The Supreme Court in its order dated 10.09.2012 directed release of water @ 10000 cusecs from 12th to 20th September and also ordered that further release be decided by the CRA.

After a gap of nine years, the meeting of the Cauvery River

Authority was held on 19.09.2012. Since no consensus could be reached, the then Prime Minister as Chairperson directed Karnataka to release 9,000 cusecs from 20.09.2012 to 15.10.2012 and directed the CMC to regulate the flows beyond 15th October, 2012. The Government of Karnataka did not accept this order. The Hon'ble Chief Minister of Tamil Nadu opposed this Order. Hence as per the order of the Hon'ble Chief Minister, an I.A. was filed on 25.09.2012 in the Supreme Court to direct Karnataka to forthwith make good the shortfall of 48 TMC ft. from its reservoirs and thereafter ensure flows as stipulated in the Interim Order dated 25.06.1991, and for adopting the Distress Sharing Formula evolved by the CWC and finalised by the CMC in its 24th meeting held on 04.12.2009.

As per the directions of the Supreme Court, discussions were held on 29.11.2012 at Bengaluru

between the Chief Ministers of Tamil Nadu and Karnataka. In this meeting, the Hon'ble Chief Minister requested the Chief Minister of Karnataka to consider the plight of the farmers of Tamil Nadu and justify the faith reposed by the Hon'ble Supreme Court and order the immediate release of 30 TMC ft. in the next 15 days, and to further release 23.4 TMC ft. before the end of December 2012. Even though Karnataka Reservoirs had sufficient storage as on 29.11.2012, the Chief Minister of Karnataka informed that no water could be released, and hence no decision could be arrived at. As ordered by the Hon'ble Chief Minister, a Petition was filed before the Supreme Court on 01.12.2012, praying that the State of Karnataka be directed to make good at least 30 TMC ft. between 1st and 15th December 2012, so that Tamil Nadu could manage its irrigation and salvage the standing crops in the Cauvery Basin. Since no

favourable decision could be obtained in the Supreme Court, on the orders of the Hon'ble Chief Minister, Tamil Nadu filed another I.A. on 17.01.2013 in the Supreme Court for directing Karnataka to release forthwith 12 TMC ft. of water from its reservoirs, so as to save at least a portion of standing crops in the Cauvery Delta and also meet the drinking water requirement. When this I.A. came up for hearing on 04.02.2013, the Supreme Court directed the Chairman, CWC, to appoint an Expert Committee of three members who would visit the Delta region of Tamil Nadu comprising of Tiruvaroor, Tanjavur and Nagapattinam Districts and report the Supreme Court before 06.02.2013. In the meanwhile, Tamil Nadu was requested to release 2 TMC ft. of water from its storage to save the standing crop. The Government also made it clear that irrespective of the report that was to be given by the

Expert Committee, Karnataka should release 2 TMC ft. of water to replenish Mettur. Accordingly, Tamil Nadu released about 2.3 TMC. ft. of water from Mettur Reservoir for the period from 04.02.2013 to 08.02.2013. The Supreme Court on 07.02.2013 accepted the report of the Expert Committee, that about One lakh acres of crop need irrigation, and ordered Karnataka to release 2.44 TMC ft. of water to Tamil Nadu to which Karnataka complied with.

Due to the untiring efforts of the Hon'ble Chief Minister, 69.7 TMC ft. of water reached Mettur Reservoir during the year 2012 – 2013.

6.1.26. The Hon'ble Chief Minister ordered to file a Suit in the Supreme Court of India claiming damages for the losses caused to Tamil Nadu due to non-release of stipulated quantity of water by Karnataka during the year 2012-2013. Accordingly, a Civil Suit

has been filed in the Hon'ble Supreme Court on 09.05.2013, seeking directions to pay damages of a sum of about Rs. 1045.70 crore towards loss of crops, loss of bio mass and loss of power generation, on account of non-release of water in terms of the interim order of the Tribunal during the irrigation year 2012-2013 as per the pro rata sharing to pass appropriate order directing the State of Karnataka to release 53.18 TMC ft. being the shortfall at Mettur Reservoir for the water year 2012-2013 as computed on the pro rata formula and to pay punitive damages of Rs. 1434 crore for deliberate non-compliance of the decision passed by the Tribunal. This Civil Suit came up before the Registrar Court on 30.01.2014. The Court referred to the registry's letter of 09.01.2014 and directed "to take out chamber summons for completion of the pleadings". Accordingly chamber summon was filed in the Supreme Court

by the Counsel of Tamil Nadu on 04.02.2014. This Civil Suit is pending in the Supreme Court.

6.2. Mullai Periyar Dam

6.2.1. The Periyar Project was executed by virtue of the Lease Deed signed between the Maharaja of Travancore and Madras Presidency on 29.10.1886. This deed is for 999 years with effect from 1.1.1886. About 8000 acres has been demised on payment of lease rent. About 2.20 lakh acres are benefited by this Project in the Districts of Theni, Dindigul, Madurai, Sivagangai and Ramanathapuram, and on an average 22 TMC.ft. of water is diverted and used in a year.

6.2.2. Thereafter two supplemental agreements were entered into between Kerala and Tamil Nadu in the year 1970. One is for increasing the annual lease rent from Rs. 5 to Rs.30 per acre subject to revision in every 30 years and surrendering fishing

rights in the Periyar Lake to Kerala. By another supplemental Agreement, Tamil Nadu is to generate hydro electric power on payment of certain charges to Kerala. These are executed as successors in interest to the Principal Deed of 1886. However, the basic character of the principal deed of 1886 was not changed.

6.2.3. In 1979, certain apprehensions were raised in the Malayalam dailies about the safety of the Periyar Dam. The Chairman, Central Water Commission inspected the dam on 23.11.1979 and declared that there was no imminent danger to the Dam. On 25.11.1979, a meeting was held at Trivandrum by the Chairman, CWC, with the officers and Engineers of both the States. In that meeting, it was decided to execute certain strengthening works under three stages, viz., Emergency measures, medium term measures and long term measures to bring the dam to the

modern standards. To facilitate execution of the emergency and medium term works, it was decided to reduce the water level **temporarily** from the FRL of 152 ft. to 136 ft. During 1980-1994, the strengthening works were executed and completed. However, the Government of Kerala insisted that the water level in the Mullai Periyar dam should continue to be maintained at 136 ft. even after the completion of strengthening works.

6.2.4. In the Writ Petition filed in the Supreme Court along with the connected matters, the Supreme Court pronounced its judgment on 27.02.2006 and permitted the Government of Tamil Nadu to raise the water level from the temporarily brought down level of 136 ft. to initially 142 ft. and also to carry out the strengthening measures as suggested by the Central Water Commission, to the Baby dam and Earth dam. The Supreme

Court 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.

6.2.5. Soon after the Supreme Court pronounced its judgment, the Government of Kerala amended its Kerala Irrigation and Water Conservation Act, 2003 known as "Kerala Irrigation and Water Conservation (Amendment) Act, 2006" on 18.03.2006, to thwart the Supreme Court's Order and fixed the FRL of Mullai Periyar Dam as 136 ft. As ordered by the Hon'ble Chief Minister, the Government of Tamil Nadu filed a Civil Suit (O.S. No.3 of 2006) in the Supreme Court on 31.3.2006

praying to declare "The Kerala Irrigation and Water Conservation (Amendment) Act 2006" as unconstitutional in its application and effect on Mullai Periyar Dam. When the case came up for hearing on 10.11.2009, the Supreme Court ordered as below.

"That the contesting parties shall maintain "Status quo" in respect of Mulla Periyar Dam as existing on that date and the order of "Status quo" will not be an impediment for Tamil Nadu to carry out maintenance and repairs for proper upkeep of the said dam".

6.2.6. The Constitution Bench which was later formed, heard the Suit from 20.01.2010 onwards. On 18.02.2010 the Supreme Court ordered the formation of an Empowered Committee, consisting of 5 Members, including the Chairman, Dr.A.S.Anand, Former Chief Justice of India. The Committee

was requested to analyse all the issues except legal aspects and to submit a report as far as possible within six months.

6.2.7. The Governments of Tamil Nadu and Kerala submitted Memorandum before the Empowered Committee. The Empowered Committee framed five issues, in which the New dam proposal of Kerala was one of the issues. The Government of Tamil Nadu submitted before the Supreme Court as well as before the Empowered Committee, that in as much as the Dam has been strengthened on the suggestions made by the Central Water Commission and with the concurrence of the Government of Kerala, and is functioning as a new dam, there is no need for a new dam as contended by the Government of Kerala.

6.2.8. Under the Empowered Committee, a Committee to Co-ordinate (CTC) to carry out the investigations, tests and studies

(ITS) on Mullai Periyar Dam under the Chairmanship of Dr. C.D.Thatte, Member of the Empowered Committee with Members drawn from Central Water Commission (CWC), Central Water and Power Research station (CWPRS), Central Soil and Materials Research Station (CSMRS) and representatives of the States was constituted. The Committee to Co-ordinate (CTC) conducted and completed several tests and technical studies.

6.2.9. In the Empowered Committee's meeting held on 02.01.2012 & 03.01.2012, submissions were made by the Counsel of Kerala and Tamil Nadu. Tamil Nadu categorically stated that there was no need to construct a new dam, since the retrofitted Mullai Periyar Dam is as good as a new dam and is functioning well; Tamil Nadu should, therefore, be permitted to raise the water level to 142 ft. as per the judgment of

the Supreme Court dated 27.02.2006.

6.2.10. The Government of Kerala on 10.01.2012 again filed an application before the Empowered Committee, among others, for construction of a new dam. The Government of Tamil Nadu filed its reply on 23.01.2012 in which it was reiterated that there is no need for a new dam in as much as the existing Mullai Periyar Dam is functioning as a new dam.

6.2.11. In the meanwhile, the Committee to Co-ordinate submitted its Report to the Empowered Committee. Based on the analysis and findings drawn from the Reports, the Empowered Committee submitted its report to the Supreme Court on 25.04.2012. In its Report, the Empowered Committee has concluded that the dam is hydrologically, structurally and seismically safe for raising the water level to 142 ft and that the

proposal to build a new dam requires reconsideration by Kerala.

6.2.12. On 09.12.2011 and 11.12.2011, the Hon'ble Chief Minister released press statements detailing the technical aspects of the Mullai Periyar dam and the strengthening works carried out by the Government of Tamil Nadu and appealed to the people of Kerala not to succumb to any divisive forces in the interest of both the States, as both the States are committed to maintaining and cherishing cordial relations.

6.2.13. In order to convey consensus view on the Mullai Periyar Dam issue, the special session of Legislative Assembly was held on 15.12.2011 and the following unanimous Resolution passed in the Legislative Assembly was sent to the Government of India on 16.12.2011 for immediate action.

" The Tamil Nadu Legislative Assembly resolves that the Supreme Court, after hearing the arguments of the Governments of Tamil Nadu and Kerala, examining the reports of experts and based on the conclusion that the Mullai Periyar Dam is safe, ordered on 27.2.2006 that the water level in the Dam be raised from 136 ft to 142 ft. After completion of remaining work of strengthening of the dam, the water level can be raised to 152 ft. With utter disregard to this order and the spirit of the Constitution of India, the Government of Kerala enacted the "Kerala Irrigation and Water Conservation (Amendment) Act,2006" and when a Suit against this amended Act is pending in the Supreme Court, the Government of Kerala, contrary to truth, carries on propaganda to create panic among its people about the safety of the Mullai Periyar Dam and while stressing the demand for the construction of a new

dam, a resolution was passed by the Government of Kerala in the Kerala Legislative Assembly on 09.12.2011 for lowering the water level to 120 ft. Though this has to be vehemently condemned, since it will not be right approach to condemn the Kerala Legislative Assembly, which is a Constitutional set up, it is proposed to convey the deep anguish of the people of Tamil Nadu on that Resolution;

That due to the untruthful propaganda by the Government of Kerala regarding the safety of the Mullai Periyar Dam, the Central Government should immediately deploy the Central Industrial Security Force in that area;

That in order to honour the decision of the Supreme Court for raising the water level to 142 ft., the Government of Kerala should make appropriate amendment to its "Kerala Irrigation and Water

Conservation (Amendment) Act, 2006";

That the Government of Kerala should not obstruct Tamil Nadu from carrying out the remaining long term strengthening works so as to raise the water level of the dam to 152 ft.;

And that the rights of Tamil Nadu will not be given up under any circumstances."

6.2.14. The National Disaster Management Authority at the unilateral request of the Government of Kerala constituted a team of experts for the preparation of a Contingency Response Plan for Mullai Periyar Dam in its proceedings dated 12.12.2011. The Hon'ble Chief Minister brought to the notice of the then Prime Minister in her letter dated 20.12.2011 to the effect that it is nothing but succumbing to the subterfuge of the Government of Kerala and to present a fait accompli to the

Supreme Court of India and the Empowered Committee constituted by it. The approach of Kerala to NDMA is to circumvent the legal process and appears to be a calculated attempt to pressure the Empowered Committee to declare the Dam unsafe. The Hon'ble Chief Minister, therefore, requested the Prime Minister to order the withdrawal of the constitution of the team of experts forthwith. The NDMA had kept in abeyance, the work of the team of experts.

6.2.15. The Hon'ble Chief Minister in the Memorandum presented to the then Prime Minister on 25.12.2011 in Chennai, among others, urged for advising Kerala to honour the orders by the Supreme Court dated 27.02.2006 and making appropriate amendments to its Kerala Irrigation and Water conservation (Amendment) Act, 2006, not to venture upon the construction of a new Dam as the retrofitted

Mullai Periyar Dam is functioning well.

6.2.16. The Hon'ble Chief Minister in her letter to the Prime Minister dated 09.02.2012, requested the Government of India, Ministry of Science and Technology, from entering into any agreement with the Government of Kerala for a real time monitoring of the Mullai Periyar Dam and if already entered into, it may be annulled and also not to carry out any activity and also to deploy CISF as already requested. On the same day, a letter was sent to the Ministry of Science and Technology in this matter. An I.A. (No. 21/2012), was filed in the Supreme Court of India on 02.03.2012 to restrain the Government of India from entering into the agreement with the Government of Kerala, among others.

6.2.17. The Supreme Court in its order dated 23.07.2012 allowed the Government of Tamil Nadu to

carry out the routine maintenance works by which the works of relaying the wearing coat on Baby dam, reaming the drainage holes, cleaning of the stilling basin, and clearing the entry to the leading channel and the tunnel by removing silt, debris, water bottles, etc. for ensuring free flow of water through the channel and the tunnel have been completed. In the year 2013–2014 along with other periodical routine maintenance works, non-skidding tiles have been laid in the drainage gallery at + 45ft. The temporary residence of Colonel J. Pennycuick at Periyar dam site has also been renovated.

6.2.18. The final arguments of the suit commenced on July 23, 2013 and continued for 10 days in various stages and concluded on August 21, 2013. During the arguments, on legal aspects the invalidity of the Kerala Water & Conservation (Amendment) Act, 2006 and the rights of the State of Tamil Nadu

from the Lease Deed of 1886 etc were argued. On facts, the recommendations of the Expert Committee, (2000) and the Empowered Committee, (2010) that the dam is safe to raise the water level initially to +142 ft were also reiterated. Further, the injury caused to Tamil Nadu on account of lowered water level i.e from +152 ft to +136 ft was substantiated. The Supreme Court after hearing the arguments on August 21, 2013 reserved the Judgment and requested the party States to file their Brief written submissions within two weeks. Tamil Nadu filed its brief Written Submission in the Supreme Court on September 2, 2013.

6.2.19. The five Member Bench of the Hon'ble Supreme Court delivered the judgement in the suit (O.S No.3 of 2006), on 07.05.2014, which is a historic judgement.

Salient aspects of the Judgment:

1. The Lease Deed executed between the Government of Travancore and the Secretary of State for India in Council on 29.10.1886 is valid and binding on the State of Kerala and it is enforceable by Tamil Nadu against the State of Kerala.

2. The State of Kerala is stopped from raising the plea that the lease deed dated 29.11.1886 has lapsed, in view of the Supplemental Agreements dated 28.05.1970.

3. The impugned "Kerala Irrigation & Water Conversation (Amendment) Act, 2006" enacted by the State of Kerala interferes with the judicial process and functions. The amended Act of Kerala is unconstitutional in so far as

Mullai Periyar Dam is concerned.

4. Kerala cannot say that the 2006 judgment of Supreme Court is without jurisdiction and not binding.

5. The finding recorded by it in the earlier Writ Petition WP (Civil) No. 386 of 2001 under Article 32 and in the O.S No. 3/2006 under Article 131 is binding on the two States.

6. The Government of Kerala argued that River Periyar is an Intra State river, as it flows within the State of Kerala. But the Government of Tamil Nadu in its arguments held that River Periyar is an Inter State River, as out of the total basin area of 5398 sq.kms, 114 sq.kms lies in the State of Tamil Nadu. If the Drainage Basin lies in more than one State, and

even if the drainage area is very small in a state there is no difference that the river is an inter-state river. The Supreme Court in its judgement has pronounced that the River Periyar is an Inter State River.

7. The Mullai Periyar dam has been consistently found to be safe, first, by the Expert Committee (2001) and then by the Supreme Court (2006). The hydrological, structural and seismic safety of the Mullaperiyar dam has also been confirmed by the Empowered Committee (2012).

8. The offer made by Kerala for the new dam cannot be thrusted upon Tamil Nadu.

9. The State of Kerala is restrained by a decree of permanent injunction in any manner interfering or

obstructing the state of Tamil Nadu from increasing the water level to 142 ft. and for carrying out the repair works as per the judgment dated 27.02.2006.

10. To allay the apprehensions of Kerala, though none exists, a 3 Member Supervisory Committee is constituted with a representative of Central Water Commission as Chairman and one representative from each State. The Committee shall supervise the raising of the water level to 142 ft. in the Mullai Periyar dam.

6.2.20. In the Memorandum presented by the Hon'ble Chief Minister to the Hon'ble Prime Minister of India on 03.06.2014, the need to immediately constitute the Supervisory Committee, as ordered by the Hon'ble Supreme Court on 07.05.2014 was

emphasized. Accepting to the request of the Hon'ble Chief Minister, the Government of India on 18.06.2014 decided to form the Supervisory Committee. The Government of India, Ministry of Water Resources on 01.07.2014 constituted the Supervisory Committee. As ordered by Hon'ble Chief Minister, on 03.07.2014, the Chairman, Supervisory Committee was requested to convene the meeting of the Supervisory Committee immediately before the South West monsoon intensifies so as to raise the water level in the Dam to 142 ft. as ordered by the Supreme Court. Following the request the 1st meeting of the Supervisory Committee was held on 08.07.2014 at Thiruvananthapuram and the Committee decided as follows:-

i. The next sitting of the committee for pre-monsoon inspection was fixed on 17.07.2014

ii. The office of the committee shall be provided by Government of Kerala at Kumuli.

iii. The request by the Government of Tamil Nadu to work out modalities of raising the water level to 142 ft. will be discussed in the next meeting of the committee.

The second meeting of the Committee was held on 17.7.2014. The Committee first inspected the dam and decided in the meeting **"to restore the water level to 142 ft. which has been categorically ordered by the Supreme Court of India in its order dated: 07.05.2014". The shutters were lowered, enabling the water level to be raised to 142 ft. on 17.7.2014.**

6.3. Palar

The Inter – State river Palar which originates in Kolar District of Karnataka traverses through Karnataka, Andhra Pradesh via Chitthur District and running through Vellore, Thiruvannamalai and Kanchipuram Districts of Tamil Nadu, before draining into the Bay of Bengal.

2. As per the Table – A of Madras – Mysore Agreement 1892, Palar falls under the list of 15 important Inter State rivers. As per the Agreement, the upstream State cannot construct any Dam structure or structures to impound the flow across the river and also divert the water without getting the concurrence of the downstream states.

3. When media on 04.01.2006, reported that the Government of Andhra Pradesh proposed to construct a reservoir with a capacity of 2TMC. Ft. across Palar near

Kuppam in Chitoor District and works were to commence, the Hon'ble Chief Minister on 05.01.2006 pointed out the Agreement conditions of 1892 to the Chief Minister, of Andhra Pradesh and urged him to drop the proposal. Following this, the Government of Tamil Nadu on 01.02.2006 requested the Government of India to take immediate action in advising the Government of Andhra Pradesh from executing any irrigation projects in violation of 1892 agreement across the River Palar and also to stop such works. Since no reply was received and in order to protect the interests of people of Tamil Nadu, on the orders of the Hon'ble Chief Minister, the Government of Tamil Nadu filed a Original Suit on 10.02.2006 in the Supreme court to restrain the Government of Andhra Pradesh from undertaking any project across the River Palar on in its tributaries.

4. The Supreme Court in its order dated 07.01.2008, ordered that the

Government of India could consider the representation of Tamil Nadu and dispose it. The Government of Andhra Pradesh may also be heard. The Government of India was given liberty to to settle the dispute between the two states.

5. Following this, a meeting at official level was held by the Chairman, Central Water Commission in New Delhi on 11.03.2008. After discussion, the Chairman, Central Water Commission requested the Government of Andhra Pradesh not to go ahead with the construction of the project before the issue is settled. It has been established that the Palar Basin is a deficit Basin by the study made by a joint study group constituted by Central Water Commission.

6. As ordered by the Supreme Court on 28.03.2011, the Secretary, Ministry of Water Resources, convened a meeting on 26.05.2011 at New Delhi with the officials of the Government of Tamil Nadu and Andhra Pradesh. The Secretary,

Government of India, Ministry of Water Resources concluded that there was no possibility of any negotiated settlement in as much as the rigid stand taken by both the States and he informed the Supreme Court accordingly.

7. The Hon'ble Chief Minister in the Memorandum Presented to the then Prime Minister on 14.06.2011 has urged to advise the Government of Andhra Pradesh not to go ahead with any work relating to the construction of the proposed Reservoir by the Government of Andhra Pradesh across the River Palar.

8. In the meantime, the Supreme Court framed 7 issues to decide the Suit. When the Suit came up for hearing on 4.07.2011, the Court requested the parties to list the witnesses. The Government of Tamil Nadu and Government of Andhra Pradesh have nominated their witnesses and their Affidavits were filed in the Supreme Court. The cross examination of Tamil

Nadu witness was held for two days. Further, cross examination will continue. After the conclusion of cross-examination of the witnesses of Tamil Nadu and Andhra Pradesh and the arguments and counter arguments of both the states Supreme Court is expected to deliver the judgement.

When media projected above Andhra Pradesh decided to construct reservoir across the River Palar, on the advise of the Hon'ble Chief Minister on 20.04.2014 the Government of India was informed that since the suit is pending before the Supreme Court and sub jurdice. the Government of Andhra Pradesh should be advised not to execute any project across the River Palar or in its Tributaries till the suit is disposed of by Supreme Court.

Since, the Palar dispute is pending before the Supreme Court and the C.W.C had already advised the Government of Andhra Pradesh not to go ahead with the project, there is no possibility for the Government

of Andhra Pradesh to construct Dam across the River Palar. However, the Government of Tamil Nadu is closely monitoring this issue and is taking all the necessary steps to protect the rights of Tamil Nadu.

6.4. Parambikulam Aliyar Project - Review of Agreement

The Parambikulam Aliyar Project, a multi-valley, multi purpose, mammoth project, was planned, designed and executed by the Government of Tamil Nadu as one of the Second Five Year Plan Projects (1955 - 1960), 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, Peruvaripallam, Thunakadavu, 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 therefore between the

Government of Tamil Nadu and Kerala was entered into on 29.05.1970 with retrospective effect from 09.11.1958. The taluks of Pollachi, Palladam, Udumalapettai and Dharapuram in the districts of Coimbatore, Tiruppur and Erode are benefited. The Palakkad District of Kerala State is also benefited. This Agreement was due for review on 09.11.1988 and thereafter once in 30 years. Accordingly, both the Governments exchanged the documents for review on 21.09.1989 and since then held several Inter-State discussions for completing the first review of the Agreement.

2. 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 first 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 meetings held on 10.11.2003 at Chennai and on 4th January 2004 at Thiruvananthapuram.

3. After prolonged correspondence, a meeting at the Chief Secretary level was held on 30.05.2008 at Thiruvananthapuram. In the 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, a meeting was held on 27.02.2009 at Chennai and it was decided to have a meeting at the Secretary level to examine all the issues in their entirety 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 25.04.2009 in Chennai.

4. In continuation of the above meetings, the Chief Secretary level meeting was held on 21.01.2011 at Thiruvananthapuram.

5. The following decisions were taken in that meeting.

6.4.1. A) Anamalayar - Diversion of 2.5 T.M.C. ft. of water from Anamalayar to Tamil Nadu.

There is a provision to divert 2.5 T.M.C ft of water from Anamalayar, as per the Agreement. A Supplementary Agreement is to be executed for this project. Since Kerala contends that the Idamalayar Project has not been completed, the above diversion is yet to be implemented. Kerala proposed to execute the project by itself and sent the combined feasibility report for the construction of dam across Anamalayar below the confluence point of Italiar for diversion of 2.5 TMC ft. to Lower Nirar dam and to divert the balance water to Manali Ar for Hydro Power Generation

(2x50 MW) to Tamil Nadu on 18.06.2013. The report has been examined and on receipt of some necessary further details from the Government of Kerala, suitable action will be taken.

6.4.2. B) Balancing reservoir above Manacadavu Weir (0.50 TMC. ft. Capacity)

Kerala is not agreeable to the proposal of Tamil Nadu for constructing a reservoir of capacity about 0.50 T.M.C. ft. above the existing Manacadavu Weir to regulate the flows to Kerala. It was explained that its requirement for additional quantity of water at Manacadavu weir over 7.25 T.M.C. ft., can be considered by Tamil Nadu if only Kerala gives concurrence for the Balancing Reservoir.

6.4.3. C) Nirar - Nallar Straight Cut

The scheme envisages the forming of a reservoir (7 TMC ft. capacity) across Nallar for diversion of water

from Upper Nirar weir directly to Nallar by means of a tunnel and also generation of (35 MW + 230 MW) Hydro power. By this scheme, an alternative to the present circuitous route i.e., from Upper Nirar to Sholayar reservoir, then to Parambikulam reservoir and Thirumurthy reservoir is proposed, to directly feed the water into the Nallar stream and thereafter to Thirumurthy reservoir for irrigation. The conveyance length will, therefore, get reduced from about 85 km to 20 km. Tamil Nadu continues to reiterate that the scheme has to be implemented. But, Kerala informed that this issue is outside the scope of the Agreement. However, Kerala requested Tamil Nadu to provide details of possible benefits that Kerala will have from this scheme, for its consideration. This request is to be examined.

A bilateral Minister level meeting was held on 28.04.2013 at Thiruvananthapuram to review the

Agreement and it has been decided to review the above issues further.

The Government is taking all possible steps to complete the first review of this Agreement quickly.

6.5. Neyyar Issue:

The Neyyar Irrigation Project, first and second stages were planned and executed by the Travancore – Cochin Government during the 1st and 2nd Five year plan periods (1950-55 & 1955-1960). 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 with the approval of the Central Government and the State of Kerala, under the Second Five Year Plan. The project is in operation from the year 1965.

2. Through the Left Bank Canal of the project, the Government of Kerala was supplying water to this area of Tamil Nadu, through the Madras Regulator. The supply of water was very much below the designed discharge of 150 cusecs. The supply was made upto February, 2004 and thereafter the Government of Kerala abruptly stopped the supply of water.

3. After the Reorganisation of States, the Government of Kerala sought the concurrence of the Madras Government for sharing the cost of the project as proposed by it in 1957. The amount to be shared by Tamil Nadu was also settled by the Government of Kerala on 01.02.1965. Accepting Kerala's claim, the Government of Tamil Nadu suggested in 1971 that an agreement is to be entered into with the Government of Kerala regarding the sharing of capital and maintenance cost and supply of water to the Tamil Nadu ayacut and this has been in correspondence since then. 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. In 1999, Kerala took the stand that since Neyyar is not an inter State river, it would not be necessary to conclude an agreement. This was the first occasion when the Government of Kerala raised the issue that Neyyar is not an inter State river.

4. In the meanwhile, when the Government of Tamil Nadu sought the intervention of the Government of India and corresponded continuously, the Government of India in 2003, requested the Government of Tamil Nadu to continue the bilateral discussion held on 13.2.2003 for amicably resolving the issue with the help of Central Water Commission whenever required. After prolonged correspondence, 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 given. Tamil Nadu took 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.

5. The Government of Kerala reiterates its 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 a portion of the catchment of the river (12.90 sq.km) in the head reaches lies in Tamil Nadu. This proves that the River Neyyar is an inter-state River.

After prolonged correspondence with the Governmnet of Kerala and also, considering the welfare of the Farmers of Vilavancode Taluk, a revised draft Agreement was sent

to Government of Kerala on 19.05.2009. But, the Government of Kerala without giving comments on the revised draft agreement, unilaterally prepared a fresh draft agreement and sent it on 11.01.2010, which was not accepted, since it was detrimental to the interests of Tamil Nadu. Based on the request of the then Chief Minister of Kerala to send a team of technical officers for discussion, a team of technical officers of both States held discussions at Thiruvananthapuram on 06.05.2011. But, no consensus was reached on the vital clauses of the draft agreement.

6. In the meantime, the Government of India was again requested to intervene in this matter, for resolving this issue. As there was no positive response from the Government of India and also since no agreement could be reached with the Government of Kerala, as ordered by the Hon'ble Chief Minister, a Civil Suit was filed in the Supreme Court on 30.05.2012

praying to direct Kerala to release water from Neyyar Dam for irrigation in Tamil Nadu. An Interlocutory application was also filed on 30.05.2012 along with the main Suit praying to direct the State of Kerala to supply water forthwith to the State of Tamil Nadu. The case was lastly heard on 03.01.2014 and adjoined to 07.02.2014. There after the case was not taken up for hearing and the Supreme Court is expected to hear case soon.

7. In the memorandum presented by the Hon'ble Chief Minister to the Hon'ble Prime Minister on 03.06.2014, it was requested to direct the Government of Kerala to restore water supply to Tamil Nadu from Neyyar dam to irrigate 9200 Acres of land in Vilavankode Taluk of Kaniyakumari district.

8. Tamil Nadu Government is taking all efforts to get water from Neyyar Dam and to safeguard the interest of the farmers of Vilavancode taluk,

and to protect the rights of Tamil Nadu.

6.6. Shenbagavalli Anicut

Shenbagavalli Anicut is a small diversion anicut built at the junction of two streams viz., Puliampattithodu and Chokkampattithodu in Periyar Basin lying in Kerala State limits just to the west of Tamil Nadu border. This anicut is reported to be in existence since 1773 AD and it diverts flows to mainly two tanks namely Kulashekhara Periya Kulam and Raisinge Periya Kulam in Sivagiri Taluk, through which 10,924 acres are irrigated.

2. Due to remote location in forest, the channel was in dilapidated condition. The repairs were done by the Government of Tamil Nadu in 1959-1962 at an estimated cost of Rs.3.25 Lakhs. Again when the channel breached in 1971, as per the estimates of the Government of Kerala a sum of Rs.5.15 lakhs being 50% of the cost was deposited to

the Government of Kerala, during 1986 to enter in to a contract and complete the repair works.

3. However, the deposit amount was refunded by the Government of Kerala in December, 2005 stating that Kerala could not undertake the repair works of the Shenbagavalli Anicut due to the objections raised by the Forest Department, as it is situated in the core zone of the Periyar Tiger Reserve.

4. The Sivagiri Vivasayigal Sangam filed a Writ Petition in the High Court of Madras, (WP No. 1274 / 2006) seeking issuance of writ of mandamus directing the Governments of Tamil Nadu and Kerala to grant necessary sanctions and consequently carryout repair works to the Kanyamadugu channel and Shenbagavalli anicut. The High Court passed an ex-parte order on 20.07.2006 directing the Government of Kerala to reconsider its decision.

5. In response to the above order, the Government of Kerala in September,2006 reiterated its earlier decision to the effect that Government of Kerala is not in a position to reconsider its earlier decision in the matter.

6. In order to ensure the protection of the welfare of the farmers benefitted by the Shenbagavalli Anicut, the intervention of the Government of India, has been sought on 01.08.2011 with a request to advise the Government of Kerala to carry out the repair works either by Kerala or by Tamil Nadu and that if the Government of Kerala agrees to carry out works, the cost will be reimbursed to them. However the Government of India Ministry of Water Resources on 19.02.2014, has advised Tamil Nadu to continue the bilateral discussion for amicably resolving all the bilateral inter-State issues including Shenbagavalli with the help of Central Water Commission wherever required.

7. The Government of Tamil Nadu is considering whether a legal remedy is available to protect its interest of farmers besides considering negotiation with the Government of Kerala.

6.7. Inter Linking of Rivers

Mahanadhi - Godavari - Krishna - Pennar - Palar - Cauvery - Vaigai - Gundar link

The Hon'ble Chief Minister in the Memorandum presented to Hon'ble Prime Minister of India on 03.06.2014 has urged the Government of India to implement the inter linking of rivers, namely, Mahanadhi - Godavari - Krishna - Pennar - Palar - Cauvery - Vaigai - Gundar and Pamba - Achankoil - Vaippar. It has been pointed out that the Supreme Court in its Order dated 27.02.2012, directed the Government of India to constitute a Special Committee for the implementation of inter linking of rivers and after the formation of the Committee on 06.05.2013, no steps

has been taken by the Government of India to implement the inter linking of rivers project. The Hon'ble Chief Minister requested that the Special Committee should be activated and all inter State rivers should be nationalised so that water resources of the country are optimally utilised.

2. The National Water Development Agency (NWDA) has prepared the feasibility report for interlinking of Mahanadhi - Godavari - Krishna - Pennar - Palar - Cauvery - Vaigai - Gundar link. It has assessed the overall surplus from Mahanadhi and Godavari as 925 TMC.ft. 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. The NWDA has assessed the benefits that would accrue as about 3 Million hectares of irrigation including 2.10 million hectares additional irrigation and substantial additional Hydro Power, besides several other

intangible benefits. Under this scheme, Tamil Nadu is expected to get about 214 TMC.ft. at the border and the additional area that could benefit by irrigation is estimated as 7.74 lakh hectares (19.13 lakh acres).

3. Tamil Nadu has requested for enhancing the quantum of water proposed to be transferred to Tamil Nadu by at least another 100 TMC.ft. Tamil Nadu also suggested an alternative alignment for the Pennar - Palar - Cauvery link, at a higher contour so as to spread the benefits within the State equitably to the most needed areas.

4. The Supreme Court has delivered a judgment on 27.02.2012 with directions to the Government of India for constitution of a Special Committee for early implementation of Inter linking of rivers so that the benefits would accrue within a reasonable time and cost.

5. The Government of Tamil Nadu conveyed to the Ministry of water

resources, the nominations of the following Members for the Special Committee as per the judgment of the Hon'ble Supreme Court for interlinking proposal of rivers by NWDA.:

(1) Hon'ble Minister (Public Works), Government of Tamil Nadu.

(2) The Secretary to Government, Public Works Department, Government of Tamil Nadu as a nominee of the Chief Secretary to Government of Tamil Nadu.

The Government of Tamil Nadu hopes that the Government of India will accede to the request of the Hon'ble Chief Minister and the committee will starts its functions.

6.8. Pamba - Achankoil - Vaippar Link

The NWDA has formulated the Pamba - Achankoil - Vaippar Link

Project, which envisages diversion of 22 TMC.ft. 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 in Tamil Nadu and will also help to generate peak power of 500 MW for Kerala.

2. The Government of Tamil Nadu has given its acceptance in December 1995 to the proposal. The Kerala Government has not yet given its concurrence for this project. However, the Government of Tamil Nadu is taking efforts through NWDA and Government of India to implement this Project.

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