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PUBLIC WORKS DEPARTMENT
WATER RESOURCES DEPARTMENT

1.0. Historic Achievement-Implementation of the Cauvery Award

As a result of continuous and tireless efforts of the Government of Tamil Nadu, the Supreme Court of India on 16.02.2018 delivered its judgement on the Civil Appeal filed by the party States in the Cauvery Water Dispute and directed the Central Government to constitute a Scheme under Section 6(A) of the Inter State Water Disputes Act 1956 so that the authorities under the scheme can see to it that the present decision which has modified the award passed by the Tribunal is smoothly made functional and the rights of the States as determined by the Supreme Court are appositely carried out. Due to the efforts taken by the Hon'ble Chief Minister, the

Government of India on 01.06.2018 has notified the scheme named as Cauvery Water Management Scheme, 2018 consisting of the Cauvery Water Management Authority and Cauvery Water Regulation Committee. Because of this, the rights of the farmers of Cauvery Delta have been protected. This is a Historic Achievement.

1.1. Activities of the Water Resources Department

Sustenance of life in the world is due to the rain which is the elixir blessed by the nature. Water is the lifeline for all living beings and is a vital resource. The spatial and temporal variations in rainfall, along with the difference in topographic and vegetation characteristics have resulted in river basins with widely varying water availability with reference to space and time. Integrated Water Resources Management can be defined as a process which promotes co-ordinated development and management of water, land and

related resources in order to maximise economic and social welfare in an equitable manner without compromising the sustainability of vital eco systems.

Climate variability and Climate Change triggering extreme events such as flooding and drought have severely impacted the Water Resources Sector. The Water Resources Department, teaming up with the other related line departments and farmers is taking up various Schemes and Projects to address these challenges effectively and to ensure timely availability of the required quantum of water to the farming community.

Important schemes / Works of the Department are:

- Kudimaramath scheme
- Issue of Vandal removed from the water bodies to the public, potters and farmers free of cost
- Athikadavu - Avinashi Scheme
- Inter-linking of Thamiraparani-Karumeniyar - Nambiyar rivers

- Desilting of Dams and Water Bodies
- Modernisation of Grand Anicut Canal under PMKSY – AIBP
- Cauvery Basin Modernisation Scheme as a National Project
- Creation of new Irrigation Infrastructure and Rehabilitation of existing systems with State Fund and NABARD assistance
- Externally Aided Projects
 - i. World Bank Assisted Dam Rehabilitation and Improvement Project (DRIP)
 - ii. ADB Assisted Climate Change Adaptation Programme in Cauvery Delta
 - iii. World Bank Assisted Tamil Nadu Irrigated Agriculture Modernisation Project (TNIAMP)
 - iv. World Bank Assisted National Hydrology Project
- Centrally Sponsored and Shared Scheme
 - i. National Agriculture Development Programme (NADP)

- ii. Repair, Renovation and Restoration (RRR) of water bodies directly linked to agriculture
- Inter-linking of rivers within the State

1.2. Water resources potential

Surface water potential

There are 34 rivers in the State which have been grouped into 17 major river basins and 127 sub-basins. The normal rainfall of the State is 911.60 mm. The total surface water potential of the State is 885 T.M.C ft. which includes 264 T.M.C ft. received from the neighbouring States through Inter-State Agreements.

Ground Water Potential

Based on the Micro level Ground Water Potential Assessment with Revenue Firka as a Unit, out of the total 1,129 Firkas in the State, 374 Firkas are categorised as Over-Exploited, 48 as Critical, 235 as Semi-Critical, 35 Firkas as Saline and 437

Firkas as Safe. The quantity and quality of the ground water are being continuously monitored and assessed by the Department.

1.3. Organisational Set Up

The Public Works Department has two wings, viz., Water Resources Department and Buildings Organisation. Each wing is headed by an Engineer-in-Chief and the overall administrative functions are presently carried out by the Engineer-in-Chief, Water Resources Department who holds the post of the Chief Engineer (General), PWD.

The Engineer-in-Chief, Water Resources Department monitors and co-ordinates the functions of all the eleven Chief Engineers of the Water Resources Department. There are four Regional Chief Engineers located at Chennai, Tiruchirappalli, Madurai and Coimbatore, who are the Basin Managers

of the river basins in their jurisdiction. There are Seven functional Chief Engineers taking up specialised functions for implementing various schemes such as, Plan Formulation (PF), Design, Research and Construction Support (DR&CS), Operation and Maintenance(O&M), State Ground and Surface Water Resources Data Centre(SG&SWRDC), Institute for Water Studies(IWS), State Water Resources Management Agency (SWaRMA) and Irrigation Management Training Institute (IMTI). In addition, the Directorate of Boilers, headed by a Superintending Engineer cadre officer is functioning under the Water Resources Department.

2.0. Inter State Water Issues

2.1. Cauvery Water Dispute

2.1.1. Final Award of the Tribunal

The Cauvery Water Disputes Tribunal (CWDT) after examining all the documents and statistics of the case, the affidavits of the Expert Witnesses and their cross-examination and hearing the arguments put forth 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.

2.1.2. 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:

(in TMC ft.)

Karnataka :	270
Tamil Nadu :	419
Kerala :	30
UT of Pondicherry :	7
Environmental Protection	10
Inevitable escapages into sea	4
Total	740

- As per the Final Order, the flow that will be made available at Billigundulu will be (182 + 10 TMC. ft. for Environmental Protection) =192 TMC. ft.
- The use of Ground Water by any State shall not be reckoned as use of water of the River Cauvery.
- Until the Government of Kerala takes up

projects to utilize its allocated share of water in full, the unutilized flows will be permitted to be used by Tamil Nadu.

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

2.1.3. 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. These SLPs were admitted by the Supreme Court and termed as Civil Appeals.

The Supreme Court in its judgement on 9.12.2016 held that these Appeals were maintainable. These Civil Appeals were finally heard by the Supreme Court from

11.07.2017 to 20.09.2017. The judgement was pronounced on 16.02.2018. The salient features of the judgement are as follows:

- (i) Being in a state of flow, no State can claim exclusive ownership of such waters so as to deprive the other States of their equitable share.
- (ii) The waters of an inter-state river passing through the riparian states constitute a national asset and no single State can claim exclusive ownership of its water. This has been reiterated in the present judgement.
- (iii) The purpose of framing the scheme is exclusively for implementation of the award. Keeping that in view, a scheme shall be framed by the Central Government within a span of six weeks from 16.02.2018 so that

the authorities under the scheme can see to it that the present decision which has modified the award passed by the Tribunal is smoothly made functional and the rights of the States as determined are appositely carried out. The need based monthly release has to be respected. No extension shall be granted for framing of the scheme on any ground. [Para 403]

- (iv) The final allocation of the shares in view of this determination would be as hereunder:-

(in TMC ft.)

Karnataka	284.75 (270 + 14.75)
Tamil Nadu	404.25 (419 - 14.75)
Kerala	30
UT of Pondicherry	7

Environmental Protection	10
Inevitable escapages into sea	4
Total	740

As a consequence of the aforesaid allocation, the State of Karnataka would now be required to make available at the interstate border with Tamil Nadu, i.e., at Billigundulu, 177.25 TMC of water for the basin. Apart from the modifications effected hereinabove, no interference has been made with the determination and findings recorded by the Tribunal.

2.1.4. Action taken to constitute the Cauvery Management Board (CMB) and the Cauvery Water Regulation Committee (CWRC).

Due to the efforts of the Government of Tamil Nadu and with the intervention of the Supreme Court the Final Order of the Tribunal was notified in the Gazette of India on 19.02.2013. Thereafter the Government of Tamil Nadu has

continuously been requesting the Government of India to immediately constitute the Cauvery Management Board and Cauvery Water Regulation Committee.

In the irrigation year, 2016-2017, during the course of hearing of the I.A. filed by Tamil Nadu for release of water by Karnataka, the Supreme Court on 20.9.2016 ordered that the Union of India shall constitute the Cauvery Management Board within four weeks. This order was reiterated on 30.09.2016 and the Court directed the Basin States to nominate their representatives before 1.10.2016. The Government of Tamil Nadu nominated its Member in CMB and sent to the Government of India. However, the Government of India filed an I.A. on 03.10.2016, seeking modification of the Orders passed in relation to the constitution of the CMB. The Supreme Court on 04.10.2016 directed that the

constitution of CMB and CWRC may be deferred.

The Civil Appeals were finally heard by the Supreme Court from 11.07.2017 to 20.09.2017. The judgement was pronounced on 16.02.2018. In this judgement, the Supreme Court elaborately dealt with the constitution of the CMB and CWRC. As per the above judgement the Central Government has to frame a scheme within 6 weeks from 16.02.2018.

During the All Party and Farmers Association Representatives meeting held on 22.02.2018 to discuss about the further course of action on the Supreme Court judgement dated 16.02.2018, among others, it was unanimously resolved to urge the Central Government to constitute the CMB and the CWRC within six weeks as directed by the Supreme Court.

On 24.02.2018, when the Hon'ble Prime Minister visited Chennai, the Hon'ble Chief Minister requested for immediate constitution of the CMB and the CWRC as ordered by the Supreme Court. On 25.02.2018, a letter was handed over to the Hon'ble Union Minister (MoWR, RD & GR) in this regard.

The Secretary, MoWR, RD & GR, Government of India, convened a meeting on 09.03.2018 to discuss the modalities and various options to set up an effective mechanism to implement the Supreme Court judgement. In this meeting, Tamil Nadu strongly urged for the constitution of the CMB and the CWRC within the stipulated time frame of 6 weeks.

The Chief Secretary of Tamil Nadu in letters to the Secretary, MoWR, RD&GR, dated 13.03.2018, 21.03.2018 and 23.03.2018 reiterated the stand of Tamil Nadu and requested to immediately constitute the CMB and the CWRC vested with all powers as provided for in the

award of the Tribunal as well as the judgement of the Supreme Court within the stipulated time.

On 15.03.2018, the Tamil Nadu Legislative Assembly convened a special Session and unanimously resolved as follows:-

“The Government of India should be urged to constitute the CMB and CWRC, vested with all powers as provided in the Final Order of Cauvery Water Disputes Tribunal, within six weeks as specified in the judgement of the Hon’ble Supreme Court dated 16.2.2018”.

This resolution was forwarded to the Hon’ble Prime Minister in the letter of the Hon’ble Chief Minister dated 15.03.2018 with a request to direct the Ministry of Water Resources, River Development and Ganga Rejuvenation, to notify the formation of the CMB and the CWRC and enable them to function effectively.

The Hon'ble Chief Minister in the Memorandum furnished to Hon'ble Prime Minister during his visit to Chennai on 12.04.2018 reiterated the request to constitute the CMB and the CWRC immediately.

The Government of India, did not comply with the judgement of the Supreme Court dated 16.02.2018 in framing a scheme for the implementation of the final order of the Cauvery Water Disputes Tribunal and the judgement of the Supreme Court dated 16.02.2018 within 6 weeks. So, the Government of Tamil Nadu on 31.03.2018 filed a contempt petition. In the meanwhile, the Central Government filed an application in the Supreme Court on 31.03.2018 for clarification about scheme mentioned in the judgement and extension of 3 months to frame a scheme. On 09.04.2018, all the above petitions were taken up for hearing by the Supreme Court.

The cases were heard on 03.05.2018, 08.05.2018 & 14.05.2018. When the case was heard on 14.05.2018, the Secretary to Government of India, MOWR filed a draft scheme in a sealed cover.

On 16.05.2018 the Supreme Court heard the case and ordered to file a revised draft scheme on 17.05.2018 as discussed on 16.05.2018. As per the order dated 17.05.2018 the Government of India, MoWR filed a revised scheme in Supreme Court for constituting a Cauvery Water Management Authority with headquarters at New Delhi and Cauvery Water Regulation Committee with headquarters at Bengaluru.

The Supreme Court in its judgement dated 18.05.2018 has accepted the revised draft scheme filed by the Government of India consisting of the Cauvery Water Management Authority and the Cauvery Water Regulation Committee and directed the Government of India to notify the same in the official

Gazette before the onset of the impending monsoon.

Government of India on 01.06.2018 has notified the scheme named as the Cauvery Water Management Scheme, 2018 consisting of the Cauvery Water Management Authority and the Cauvery Water Regulation Committee. Government of Tamil Nadu have nominated the Principal Secretary to Government, Public Works Department as a member in the Cauvery Water Management Authority and the Chief Engineer, Water Resources Department, Trichy Region as a member in the Cauvery Water Regulation Committee on 01.06.2018 and informed the same to MoWR, RD & GR, Government of India.

In the letter written by the Hon'ble Chief Minister of Tamil Nadu on 06.06.2018, the Hon'ble Minister for Water Resources, Government of India has been requested to immediately nominate the members of the Government of India to these

Authorities and make them operational so that the due share of water is released to Tamil Nadu in the current irrigation year. It is expected that the Chairmen and Members for these Authorities will be nominated and meetings convened early.

2.1.5. Irrigation season 2017-2018

As per the Indian Meteorological Department, the South-West Monsoon hit the Kerala coast on 30.05.2017. In the year (2017-2018), the southwest monsoon intensified in the Cauvery catchment from the last week of June only. The Government of Karnataka did not release the quantity due at Billigundulu right from June 2017. Tamil Nadu Government addressed the Government of Karnataka and the Government of India, MoWR, RD &GR, on 10.08.2017, 18.09.2017 and 25.10.2017 to make us the shortfall in flows to be realized at the inter-State border at Billigundulu. Further it was requested to

release water as per the Final Order of the CWDT.

The Mettur reservoir could not be opened for irrigation on the normal date of 12th June due to inadequate storage. The dam was thrown open only on 02.10.2017 with the available storage and with the hope that the Northeast monsoon would set in on time and would be normal.

As per the report of India Meteorological Department (IMD), the rainfall in the catchment area of Cauvery basin in Karnataka was normal during the South-west monsoon. The rainfall continued to be normal in the Northeast monsoon period also. The rainfall was deficient only in the Cauvery catchment of Kerala. However, Government of Karnataka did not release the respective share of water to Tamil Nadu stating that this year to a distress year

The Hon'ble Chief Minister of Tamil Nadu wrote a letter to the Hon'ble Chief

Minister of Karnataka on 12.01.2018 stating that the crop season in Karnataka was already over and there is a gross storage of about 49.82 T.M.C ft. as on 12.01.2018 in Karnataka's four major reservoirs in the Cauvery basin. After reserving a minimum need of drinking water supply and perennial crops, Karnataka could release at least 15 T.M.C ft. to Tamil Nadu to make up a part of the shortfall, which was required to meet the crucial need of the standing crops in the Cauvery Delta. It was also requested for immediate release of 7 T.M.C. ft. of water to Tamil Nadu and the balance within a fortnight for saving the standing crop in Tamil Nadu. However, the Government of Karnataka did not consider the request of the Government of Tamil Nadu.

The Mettur dam was closed for irrigation on 28.01.2018.

The flows realized at Billigundulu from 01.06.2017 to 31.05.2018 is 121.9049 T.M.C. ft. only, against 192.0000 T.M.C.

ft. due as per the Final Order of the Tribunal. There is a shortfall of 70.0951 T.M.C. ft.

2.1.6. Suit filed by Tamil Nadu in the Supreme Court against Karnataka for claiming damages due to non-release of water due to Tamil Nadu in 2012-2013.

During the irrigation season 2012-2013, even though the South West monsoon commenced on 05.06.2012, it was below normal and did not intensify in the catchment area of Cauvery. As usual, Karnataka had stored entire water in its reservoirs and did not release water to Tamil Nadu either as per the Interim Order or as per the Distress Sharing Formula evolved by the Central Water Commission (CWC) and accepted by the Cauvery Monitoring Committee.

Due to continuous efforts taken by Government of Tamil Nadu, 69.7

T.M.C. ft. water was received in Mettur dam for the year 2012-2013.

The Government of Tamil Nadu filed a Suit (O.S.No.4/2013) in the 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, to pass appropriate order directing the State of Karnataka to release 52.18 T.M.C. ft. being the shortfall at Mettur Dam for the water year 2012-2013 as computed on the pro rata formula at the commencement of the year 2013-2014 and to pay punitive Damages of Rs.1434.00 crore for deliberate non-compliance of the decision passed by the Tribunal. The suit is pending in the Supreme Court.

2.1.7. Suit filed in the Supreme Court against the Government of Karnataka for Sewage let into Cauvery and Pennaiyar

In view of the huge damage and suffering likely to occur to Tamil Nadu and its inhabitants due to letting in of sewage and industrial effluents in Cauvery and Pennaiyar rivers by Karnataka, Tamil Nadu filed a Suit along with an I.A. in the Supreme Court on 05.06.2015.

On behalf of Union of India, the 2nd Defendant, Ministry of Environment, Forest & Climate Change filed its reply on 12.11.2015. Karnataka filed Written Statement in the Supreme Court on 28.02.2016. Tamil Nadu filed its Replication to the Written Statement of Karnataka on 28.09.2016.

When the Suit came up for hearing on 07.07.2017, the Supreme Court referred the issue to the Central Pollution Control Board (CPCB) to hear the parties and submit a report to the Court within 6

months from the date the parties appear before the CPCB.

The CPCB convened 2 meetings with the officers of Pollution Control Boards of Karnataka and Tamil Nadu on 01.08.2017 and 22.09.2017 in New Delhi. A follow-up meeting was also held in Bengaluru on 17.08.2018. It was decided to carry out joint monitoring on monthly basis and two sites, namely, Ajjibore in Cauvery River and Chokkarasanapalli in Pennaiyar River, were identified for collection of water samples. The CPCB, during the 2nd meeting on 22.09.2017, accepted Tamil Nadu's request of extending joint monitoring upto May, 2018 to know the level of pollution during lean flow periods and sampling is being continued.

In the meanwhile, based on the analysis of monthly samples collected at the above 2 sites from September to December, 2017, the CPCB has filed an Affidavit and report in the Hon'ble Supreme Court on 29.01.2018. As per this report the Stand of Tamil Nadu that the water of the river

of Pennaiyar and Cauvery are polluted before they enter the Tamil Nadu border has been confirmed.

When the Suit again came up for hearing on 13.04.2018, the Supreme Court directed the CPCB to file its final report in the Second Week of July 2018 and adjourned the matter without fixing a date for further hearing.

2.2. Mullai Periyar Dam

2.2.1. The Periyar Project was executed by virtue of the Lease Deed signed between the Maharaja of Travancore and Secretary of State for India in Council on 29.10.1886. This deed is for 999 years with effect from 01.01.1886. 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, Ramanathapuram and Sivagangai and on an average 22 T.M.C. ft. of water is diverted and utilised in a year.

2.2.2. 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 hydroelectric 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.

2.2.3. Apprehensions were raised about the safety of the Dam. In order to bring the Dam to modern standards, the Central Water Commission suggested certain remedial measures. For the purpose of carrying out the works, the water level was temporarily brought down to 136 ft. The Central Water Commission had also certified that upon carrying on certain works, the water level could be raised to 145 ft.

and ultimately to FRL 152 ft. after completing all the strengthening works. However, the Government of Kerala held the view that the water level in the Dam should be kept at 136 ft. at all times.

2.2.4. In the Writ Petition filed in the Supreme Court along with the connected matters, the Supreme Court pronounced its judgement on 27.02.2006, which 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 remaining strengthening measures such as strengthening of Baby Dam and Earthen Dam etc., as suggested by the Central Water Commission. 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 its 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. (FRL).

2.2.5. Soon after the Supreme Court pronounced its judgement, the Government of Kerala amended its Kerala Irrigation and Water Conservation Act, 2003 known as "Kerala Irrigation and Water Conservation (Amendment) Act, 2006" on 18.02.2006, to thwart the Supreme Court's Order and fixed the FRL of Mullai Periyar Dam as 136 ft. The Government of Tamil Nadu filed a Suit (O.S.No.3 of 2006) in the Supreme Court on 31.02.2006 praying to declare "The Kerala Irrigation and Water Conservation (Amendment) Act, 2006" as unconstitutional in its application to and effect on Mullai Periyar Dam. The

Supreme Court constituted an Empowered Committee to give its recommendations except on legal aspects.

2.2.6. The 5 Member Constitution Bench of the Supreme Court, after going into the report of the Empowered Committee and also the final arguments, decreed the Suit in favour of Tamil Nadu on 07.05.2014.

The Salient aspects are:-

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 estopped from raising the plea that the lease deed dated 29.10.1886 has lapsed in view of the Supplemental Agreements dated 29.05.1970.

3. The impugned "Kerala Irrigation & Water Conservation (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 judgement of Supreme Court is without jurisdiction and not binding.
5. The finding recorded by it in the earlier Writ Petition (W.P.(Civil) No. 386 of 2001) under Article 32 on 27.02.2006 and in the O.S No. 3/2006 under Article 131 on 07.05.2014 is binding on the two States.
6. 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 Mullai Periyar Dam has also been confirmed by the Empowered Committee (2012).

8. The offer made by Kerala for the new Dam cannot be thrust 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 judgement 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 each from the State

of Tamil Nadu and Kerala. The Committee shall supervise the raising of the water level to 142 ft. in the Mullai Periyar Dam.

2.2.7. The Supreme Court dismissed the Review Petition filed by the Government of Kerala on 02.12.2014.

2.2.8. Supervisory Committee

As per the Decree of the Hon'ble Supreme Court and as urged by the Government of Tamil Nadu, the Government of India constituted the Supervisory Committee consisting of the representative of Central Water Commission as Chairman and one representative from each State. As decided in the 2nd meeting of the Supervisory Committee held on 17.7.2014, the shutters of the spillway were lowered down. The water level in the Mullai Periyar Dam reached 142 ft. on 21.11.2014 which was a historic achievement after 35 years. Further, for the second time on

07.12.2015, the water level reached 142 ft. The Supervisory Committee has so far held 10 meetings.

2.2.9. Sub - Committee

As decided in the 2nd meeting of the Supervisory Committee on 17.07.2014, a Sub-Committee was constituted on 12.08.2014 to assist the Supervisory Committee without powers to issue any direction to the states. The Sub-committee inspects the dam periodically and reports to the Supervisory Committee.

2.2.10. Balance Strengthening works to be carried out to restore the water level to 152 ft. (FRL)

The balance works suggested by Central Water Commission, recommended by Expert Committee (constituted in the year 2000) and ordered by the Supreme Court in its Order dated 27.02.2006 which has been reiterated by the Empowered Committee (constituted in the year

2010) and by the Supreme Court in its Order dated 07.05.2014 are:

- i) Strengthening the Baby Dam including instrumentation
- ii) Strengthening the earthen bund
- iii) Protecting the earth mound (the upstream side of island between Main Dam and Baby Dam)
- iv) Protecting the upstream side of the Island between Main Dam and spillway.
- v) Raising the upstream parapet wall from + 158 ft. to 160 ft. of the Main Dam in the remaining length of 20 metres.

2.2.11. The Government have accorded Administrative Sanction for an amount of Rs. 7.85 crores, vide G.O. (Ms.) No. 122, PWD, dated 16.06.2015. Further, to facilitate carrying out the works early, orders were issued, vide, G.O. (Ms.) No.

142, PWD, dated 17.07.2015 to split up the works into 8 works. The work for raising the upstream parapet wall from +158 ft. to 160 ft. in the remaining length of 20 m. of the Main Dam and the work of protecting the downstream side of spillway and Reservoir rim & protecting the upstream side of island between Main Dam and Baby dam upto RL 165 ft. have been completed.

To strengthen the Baby Dam, 23 trees have to be felled down for which action is being pursued to obtain the necessary wildlife and environmental clearance from the Ministry of Environmental and Forest Government of India and it is expected that the Government of India will give the clearances at the earliest.

The Government of Kerala is not extending co-operation to carry out the remaining strengthening works by Tamil Nadu as per the judgement of the Supreme Court. Therefore, the

Government of India was repeatedly requested to advise the Government of Kerala to cooperate in the matter. The Government of Kerala was also continuously addressed in this matter. Since no reply was received, the Government of Tamil Nadu, in order to execute the Decree of the Supreme Court dated 07.05.2014, has filed an Execution Petition on 01.03.2017 in the Supreme Court. The State of Tamil Nadu filed its Rejoinder on 30.10.2017 for the Counter Affidavit of Kerala. This is pending in the Hon'ble Supreme Court of India.

2.2.12. Regarding the resumption of power supply to the Dam site, to enable to lay underground cable, diversion of forest land of about 0.25 ha. in Periyar Wildlife Sanctuary / Tiger Reserve of Kerala is required. For that, the Green Bench of the Supreme Court in August 2014, gave its clearance. However, further clearance from the Chief Conservator of Forest,

Ministry of Environment & Forests, Regional Office (SZ), Bengaluru has not been obtained by the Kerala State Electricity Board due to non-cooperation of Kerala Forest Department. As the State of Kerala is not cooperating to grant clearance, this has also been prayed for in the above Execution Petition. The Government of Tamil Nadu is pursuing the matter continuously with the Government of Kerala in this regard.

2.2.13. Construction of a Mega Car Park in the water spread area of Mullai Periyar Dam by the Government of Kerala.

National Green Tribunal

The Government of Kerala has proposed a Mega car park in the water spread area of Mullai Periyar Dam. Two Applications were already filed before the National Green Tribunal (Southern Zone) by residents of

Kerala, opposing the construction of Mega Car Park by the Government of Kerala. The Government of Tamil Nadu prayed before the National Green Tribunal on 04.09.2014 to implead as a Party Respondent and also prayed to pass an order of injunction restraining the authorities concerned from proceeding with any construction, earth filling or any related developmental activity in the area leased and in possession of the State of Tamil Nadu. On 29.09.2014, when the matter came up for hearing, the National Green Tribunal (Southern Zone) ordered that the status *quo* granted shall continue until further orders.

2.2.14. On 20.11.2014, when the case came up for hearing, the NGT observed that since there is a controversy as regards the factual aspect of the construction site, it constituted a 2 Member Committee, one member to be nominated by the Surveyor

General of India, and the other by the Inspector General of Forests, Government of India to inspect the site and file a report. The two Member Committee, after inspection submitted its report to the Tribunal on 02.07.2015.

2.2.15.The National Green Tribunal on 17.02.2017 permitted the State of Kerala to park the tourist vehicles in Kumili Town subject to the condition that no further development and no further filling or laying floor with cement concrete or putting of Thaar or other laying tiles or any other constructions at the site should be carried out.

2.2.16.On 15.11.2017, in the Judgement delivered by the Hon'ble Tribunal, it has been ordered that *when the Hon'ble Supreme Court has already seized of the said matter, in any case the Tribunal cannot decide the question. The dispute based on the plea that the proposed*

construction site is within the lease hold water spread area, can only be decided by the Hon'ble Supreme Court. Further the decision in this case on that aspect is subject to the decision of the Hon'ble Supreme Court in O.S. No. 4 of 2014.

2.2.17.Suit and Civil Appeal filed in the Supreme Court on 20.11.2017

The Government of Tamil Nadu filed a Civil Suit (O.S. No. 4 of 2014) on 26.09.2014 in the Supreme Court against the proposal of Government of Kerala to construct a Mega Car Park and also to remove the encroachments in the leased area. When the case came up for hearing on 15.09.2017 & 27.11.2017, the Supreme Court ordered that the authorities of both the States to sit down, discuss and settle the dispute. Accordingly a meeting was held at Thiruvananthapuram on 19.01.2018 and no consensus could be arrived at. Another meeting is expected to be

held shortly. This is pending in the Hon'ble Supreme Court of India.

Following the judgement of the Hon'ble Tribunal, the Government of Tamil Nadu on 20.11.2017, had filed a Civil Appeal (19581-19582/2017) praying to stay the operation of the impugned order dated 15.11.2017 (89 and 212 / 2014) passed by the Tribunal and to direct the Government of Kerala not to take up any construction activities in the water spread area of Mullai Periyar Dam. When the case came up for hearing on 04.12.2017, the Supreme Court passed an interim order that no permanent construction should be carried out by Government of Kerala.

2.3. Palar River Water Issue

2.3.1. The Inter - State River Palar which originates in Kolar District in Karnataka traverses through Andhra Pradesh via Chittoor District and runs through Vellore, Thiruvannamalai and Kancheepuram Districts in Tamil

Nadu, before draining into the Bay of Bengal.

2.3.2. As per the Schedule - A of Madras - Mysore Agreement of 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.

2.3.3. When the media, on 04.01.2006, reported that the Government of Andhra Pradesh proposed to construct a reservoir with a capacity of 0.6 TMC ft. across Palar at Ganesapuram in Kuppam Taluk in Chittoor District and works were to commence, the Hon'ble Chief Minister on 05.01.2016 pointed out the conditions of Agreement 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, Ministry of Water Resources to take immediate action 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 from the Government of Andhra Pradesh and in order to protect the interests of people of Tamil Nadu, the Government of Tamil Nadu on 10.02.2006 filed a Suit (O.S. No.2/2006) in the Supreme Court praying to stop the execution of the said project of Andhra Pradesh.

2.3.4. In accordance with the orders of the Supreme Court dated 07.1.2008 and 28.2.2011, the meeting convened by the Government of India with the Governments of Tamil Nadu and Andhra Pradesh did not yield any solution to the issue.

The cross examination of the Tamil Nadu witness was completed on 20.01.2017. The cross-examination of the Andhra Pradesh witness is also completed on 11.05.2018. After hearing the arguments and counter arguments of both the States, the Supreme Court is expected to deliver the judgement.

2.3.5. In the meanwhile no consensus was reached in the meeting convened by the MoWR, with the Government of Tamil Nadu, Karnataka & Andhra Pradesh on 07.05.2018.

2.3.6. In the meantime, there were newspaper reports that the Government of Andhra Pradesh has increased the height of the Check Dam across Palar River at Perumpallam Village, in Chittoor District near the Andhra Pradesh-Tamil Nadu border, from the existing height of 5 ft. to 12 ft. The Government of Tamil Nadu

immediately on 01.07.2016 and again on 11.07.2016 addressed the Government of Andhra Pradesh lodging its strong protest against the action with regard to increasing the height of Check Dams and requested to immediately reduce the height of the check dams to the original level.

2.3.7. The Government of Tamil Nadu, on 11.07.2016 requested the Ministry of Water Resources, River Development and Ganga Rejuvenation, Government of India to immediately intervene in the matter and issue instructions to the Government of Andhra Pradesh to reduce the height of Check dams to their original level, not to store additionally and not to carry out any activities across Palar in violation of the Madras-Mysore Agreement, 1892.

2.3.8. As there was no response from the Government of Andhra Pradesh and the Government of India, the Government of Tamil Nadu, filed a Suit with an Interlocutory Application

(I.A.) in the Supreme Court on 18.7.2016. (O.S.3/2016).

2.3.9.The Government of Tamil Nadu filed an Amended Plaint on 03.03.2017 which has been admitted by the Supreme Court.

2.3.10.The Government of Andhra Pradesh and the Government of India filed their written statements in the Supreme Court on 27.10.2017 and 15.11.2017. Replication for the Written Statements filed by the State of Andhra Pradesh and Union of India were filed by the Government of Tamil Nadu on 05.12.2017. Further the Government of Tamil Nadu filed its replication to the written statement of Karnataka on 04.05.2018. The suit is pending.

2.4. Parambikulam Aliyar Project - Review of Agreement

2.4.1. The Parambikulam Aliyar Project, a multi-valley, multipurpose, 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 west flowing rivers of Anamalayar, Nirar, Sholayar, Parambikulam and its tributaries Peruvuripallam, Thunakadavu and the Palar and Aliyar flowing in the plains and the streams flowing into them, for generation of Hydro Electric Power, irrigation, drinking water supply, industrial use and other purposes in both the States. An agreement between the Governments of Kerala and Tamil Nadu was entered into on 29.05.1970 with retrospective effect from 09.11.1958. The Taluks of Pollachi, Palladam, Udumalaipettai and Dharapuram in the Districts of Coimbatore and Tiruppur are benefited. The Palakkad and Trichur Districts of Kerala State are 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 at the level of Ministers and Officials for completing the review of the Agreement.

2.4.2. 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 which was constituted submitted its Report in May, 2003. The Report was discussed in the subsequent Inter-State meetings.

2.4.3. Discussion in this matter is being held

between Government of Tamil Nadu and Kerala. The Government of Tamil Nadu is taking all steps to complete the first review of the PAP Agreement.

2.4.3.1A) Anamalayar - Diversion of 2.5 TMC ft. of water from Anamalayar to Tamil Nadu.

There is a provision to divert 2.5 TMC ft. of water from Anamalayar, in the Agreement. A Supplementary Agreement is to be executed for this purpose. 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 to Tamil Nadu on 18.06.2013, 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). The report was examined and additional details were requested on 6.4.2016 and on receipt of them from the Government of Kerala, suitable action will be taken. In the meanwhile, Government in March 2018 constituted a Technical Advisory Expert Committee for the implementation of Anamalaiyar Project and Nirar-Nallar multipurpose project. The committee has been directed to submit its report within a period of 6 months. The committee has commenced its assignment.

2.4.3.2 B) Construction of Balancing Reservoir above Manacadavu Weir (0.50 TMC. ft. Capacity)

As per PAP agreement, Tamil Nadu would release 7.25 TMC ft. of water to Kerala at Manacadavu Weir. Kerala is not agreeable to the proposal of Tamil Nadu for constructing a reservoir of capacity 0.50 TMC ft.

above the existing Manacadavu Weir to regulate the flows to Kerala. The Government of Tamil Nadu is taking continuous action to get concurrence of Government of Kerala.

2.4.3.3 C) Nirar - Nallar Multipurpose Straight Cut Scheme

The scheme envisages formation of a reservoir with 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. Tamil Nadu is pressing for Nirar – Nallar Multipurpose Straight cut scheme, an alternative to the present circuitous route i.e., from Upper Nirar to Sholayar reservoir, then to Parambikulam reservoir and Thirumurthy reservoir to directly feed the water into the Nallar stream and thereafter to Thirumurthy reservoir for irrigation to avoid the water loss. The

conveyance length will, therefore, get reduced from about 85 km to 20 km. The concurrence of the Government of Kerala was sought for this project. But Kerala informed that this project is a new project not within the purview of the review of the Agreement and not accepted for the same. However, the Technical Advisory Expert Committee constituted has been requested to suggest a solution to take up this project and to get the concurrence of the Government of Kerala.

2.5. Neyyar Irrigation Project

2.5.1. 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 (1950-1955 & 1955- 1960). Due to the States Re-organisation 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 Tamil Nadu and forms part of Kanniyakumari District. The canal works required to feed this ayacut were executed by the Government of Tamil Nadu with the approval of the Government of India and the Government of Kerala, under the Second Five Year Plan. The project is in operation from the year 1965.

2.5.2. The Government of Kerala was supplying water to Tamil Nadu, from the Left Bank canal 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.

2.5.3. After the Re-organisation of States in 1956, the Government of Kerala sought the concurrence of the Madras Government for sharing the cost of the project as proposed by it in 1957.

On 01.02.1965 the Government of Kerala requested for the concurrence for sharing of the said amount. Accepting Kerala's claim, the Government of Tamil Nadu prepared a draft agreement for sharing of capital cost and supply of water to Tamil Nadu and requesting Kerala's consent and this has been in correspondence since then. Eventhough 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. The Government of Tamil Nadu and Kerala held bilateral discussions but no solution could be found out. The intervention of the Government of India sought by the Government of Tamil Nadu also did not yield fruitful results. So, the Government of Tamil Nadu on

30.05.2012 filed a Suit along with an I.A. in the Supreme Court. In this case, it has been prayed to forthwith supply water to Tamil Nadu from Neyyar Irrigation Project.

2.5.4. The Supreme Court in its order dated 22.2.2017 has directed to file the list of witnesses. The name of witness has been filed by the State of Tamil Nadu on 12.04.2017 and his Affidavit was filed on 08.08.2017 in the Hon'ble Supreme Court. The cross examination of Tamil Nadu witness was commenced from 12.12.2017 and it is scheduled to continue in the Hon'ble Supreme Court.

2.5.5. 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.

2.6. Repairs to Shenbagavalli Anicut

2.6.1. 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 1,773 AD and it diverts flows to mainly two tanks namely Kulashekharaperi and Raisingeperi in Sivagiri Taluk of Tirunelveli District through a channel, namely, Kanyamathagu channel which is 4,400 ft. (1341m) long. About 10,924 acres in Tirunelveli and Virudhunagar Districts are being irrigated.

2.6.2. 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.2.25 Lakhs. Again when the channel breached in 1971, as per the estimates of the Government of Kerala for Rs.10.20 lakhs, a sum of Rs.5.15 lakhs which is 50% of the estimated cost was deposited to the Government of Kerala, during 1986.

2.6.3. However, the deposit amount was returned 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.

2.6.4. The Sivagiri Vivasayigal Sangam filed a Writ Petition in the High Court of Madras, (W.P. No. 1274 / 2006) seeking issuance of writ of mandamus directing the Governments of Tamil Nadu and Kerala to grant necessary sanctions and consequently carry out repair works to the Kanyamathagu 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. However, the Government of Kerala in September 2006, reiterated its earlier decision.

2.6.5. To save the livelihood of farmers depending on Shenbagavalli Anicut water for agriculture, the Government of Tamil Nadu requested the Government of India

on 01.08.2011 to advise the Government of Kerala to repair the anicut and channels or to give concurrence to Tamil Nadu to execute the repairs. However, the Government of India, Ministry of Water Resources on 19.02.2014, reiterated that the Government of Tamil Nadu may continue the bilateral discussion for amicably resolving all the Inter-State issues including Shenbagavalli anicut with the help of Central Water Commission wherever required. In the meanwhile, the Government of Kerala in August, 2010 stated that the repairs to the Shenbagavalli anicut could not be carried out till a decision is taken up in the Suit on Mullai Periyar Dam. Since the Suit was disposed of on 07.05.2014, the Government of Kerala was repeatedly addressed to convey its concurrence to execute the repair works by Tamil Nadu or by Kerala for which reimbursement will be made by Tamil Nadu. However the Government of Kerala on 29.02.2016

and 08.12.2017 has reiterated its earlier stand.

Inspite of the repeated requests made by the Government of Tamil Nadu, and the direction of the Hon'ble High Court of Madras, and the advice of the Government of India, to reconsider its decision, the Government of Kerala is yet to convey the concurrence. Tamil Nadu continued persuading Kerala for its concurrence even during the recently held Secretary level meeting on 19.01.2018 at Thiruvananthapuram.

2.6.6. In the meanwhile, 3 Writ Petitions (1260 / 2015, 2398 / 2015 and 3601 / 2015) have been filed in the Madurai Bench of Madras High Court praying to take steps to repair the Shenbagavalli Anicut and Kanyamathagu channel. The Government of Tamil Nadu, one of the respondents has filed its Counter Affidavits for the above three Writ

Petitions on 15.6.2017. These cases are pending.

2.6.7.The Government of Tamil Nadu is taking continuous efforts to protect the welfare of the farmers depending on Shenbagavalli anicut.

2.7. Pennaiyar River

2.7.1.The River Pennaiyar originates at Nandidurg in Karnataka and flows through the States of Karnataka, Andhra Pradesh, Tamil Nadu and Union Territory of Puducherry before confluencing into the Bay of Bengal.

2.7.2.The Pennaiyar River is an Inter State River and is also one of the rivers mentioned in Schedule-A annexed to the Madras-Mysore Agreement of 1892. As per Clause-II of this Agreement, the upstream State should not, without the previous consent of the downstream Tamil Nadu State, build any new Anicut or any structure across any part of the river to obstruct, divert or store the

waters of the river.

2.7.3. The Pennaiyar River flows through the Districts of Krishnagiri, Dharmapuri, Tiruvannamalai, Villupuram and Cuddalore in Tamil Nadu and is the lifeline of the people living in these Districts. The river irrigates nearly 4 lakh acres in Tamil Nadu.

2.7.4. When the Government of Karnataka proposed to construct Check Dams and diversion structures across the river Pennaiyar, the Government of Tamil Nadu wrote a letter on 19.05.2012 pointing out that the attempt of the Government of Karnataka to construct the check Dams and diversion structures will obstruct the flows across the river Pennaiyar and will be a serious breach of 1892 Inter-State Agreement on this issue and that it will severely affect the farmers of Tamil Nadu, besides affecting the basic drinking water supply position. The Government of India was, therefore, requested to advise the Government of Karnataka to stop forthwith the execution of any check

Dams or diversion structures etc., across the river Pennaiyar. The Government of India is continuously being requested to advise the Government of Karnataka in this matter. Since no favourable reply is received from the Central Government and Karnataka, the Government of Tamil Nadu filed a suit in the Hon'ble Supreme Court on 18.05.2018.

The Government of Tamil Nadu is taking all efforts to protect the interest of the farmers fed by the river Pennaiyar and the people as a whole dependent on river Pennaiyar.

2.8. Inter Linking of Rivers

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

The Government of Tamil Nadu has consistently been urging the Government of India to implement the inter linking of Peninsular rivers, namely, Mahanadhi - Godavari - Krishna - Pennar - Palar - Cauvery - Vaigai - Gundar and Pamba -

Achankoil - Vaippar.

2.8.2. The National Water Development Agency (NWDA) has prepared the feasibility reports for interlinking of Mahanadhi - Godavari - Krishna - Pennar - Palar - Cauvery - Vaigai - Gundar link in 2004. Under this scheme, Tamil Nadu is expected to get about 214 T.M.C. ft. and the additional area that could benefit by irrigation is estimated as 7.74 lakh hectares (19.13 lakh acres). DPR for this link is to be taken up by NWDA and it is now conducting water balance study of Mahanadhi basin considering the recent developments.

2.8.3. Tamil Nadu has requested for enhancing the quantum of water proposed to be transferred to Tamil Nadu by another 100 T.M.C 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.

2.8.4. In the meanwhile, the Supreme Court in its Order dated 27.02.2012 in W.P. (Civil) No.512 of 2012, directed the Government of India to constitute a Special Committee for the implementation of inter linking of rivers. The Committee was formed on 06.05.2013. The Government of Tamil Nadu 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.

Special Committee for Inter Linking of Rivers

2.8.5. The Ministry of Water Resources, Rivers Development and Ganga Rejuvenation, Government of India, notified the constitution of the Special Committee for Inter linking of Rivers in its Gazette dated 22.09.2014. The Government of Tamil Nadu's nominees in the Committee are Hon'ble Minister (Public Works), Government of Tamil Nadu and the

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

2.8.6. In the 14 meetings so far held, Tamil Nadu had emphasised that the Inter Linking of Rivers Project should be taken up immediately as per the orders of the Supreme Court. In addition, the stand of the Government of Tamil Nadu on the following points are presented to the Special Committee from time to time:-

- a) The Interlinking of Peninsular Rivers Project should be implemented under National Perspective Plan as is being done in the case of Ganga Rejuvenation.
- b) The consensus of the states need not be obtained as it will delay the implementation of the scheme. The preparation of Detailed Project Report for linking the Rivers of Mahanadhi - Godavari - Krishna - Pennar - Palar - Cauvery - Vaigai -

Gundar should be taken up without further delay.

- c) National Water Development Agency (NWDA) should be instructed to prepare the Detailed Project Report for Pamba – Achankoil - Vaippar link immediately as a feasibility report has already been prepared by NWDA.
- d) It was suggested that the Government of India can enact a law through the Parliament for implementing the interlinking of rivers project.
- e) It is also urged in the meetings that specific time bound action plan should be drawn by the Special Committee, so that this project of utmost National importance is implemented speedily and effectively without further loss of time.

2.8.7. Hon'ble Chief Minister in the Memorandum presented to the Hon'ble Prime Minister on 27.02.2017 had pointed

out that not much headway has been made in the inter linking of rivers and reiterated the demand to nationalise all Inter-State Rivers.

2.8.8. Since, the issue of surplus water in Mahanadhi is yet to be finalized and the proposed Inchampalli Dam on River Godavari could not be materialized in view of submergence, NWDA in December, 2017 has proposed an alternative plan to divert the surplus water of Godavari river of 7000 Mcum (247 T.M.C. ft.) at Akinepalli about 74 Km downstream of Inchampalli. Phase-I will comprise of three links viz., Godavari (Akinepalli) – Krishna (Nagarjunasagar), Krishna (Nagarjunasagar) – Pennar (Somasila) and Pennar (Somasila) - Cauvery (Grand Anicut) and it is proposed to take up the other links in the proposal in Phase-II. After meeting the enroute requirements, it is proposed to deliver a quantum of 1600 Mcum (57 T.M.C. ft.) at Cauvery (Grand Anicut). The other links in this project will be taken up in the next

phase.

2.8.9. In the Regional Conference of Southern States on Water Resources held at Hyderabad on 20.02.2018, chaired by Hon'ble Union Minister for State (WR, RD & GR), Tamil Nadu requested in the proposal of Godavari (Akinepalli) – Cauvery (Grand Anicut) link to enhance the quantity to be delivered at Cauvery. Hon'ble Chief Minister on 25.02.2018 wrote to the Hon'ble Union Minister (WR, RD & GR) requesting to ensure that atleast a minimum of 125 T.M.C of water is made available to Tamil Nadu and the quantity to Tamil Nadu should be further stepped up as and when the surplus water of Mahanadhi is transferred to Godavari and the link from Somasila to Cauvery should be taken at a higher contour level so that water would reach Kattalai Barrage (located upstream of Grand Anicut) at a higher elevation.

2.8.10. During the discussion held at Chennai on 25.02.2018 by the Hon'ble Union Minister (WR, RD & GR) with the Hon'ble Chief

Minister, Water and Power Consultancy Services Ltd. (WAPCOS), presented an alternative proposal and reported that on an average 3000 T.M.C. ft. flows at Polavaram across Godavari and 500 T.M.C. ft. of surplus water of Godavari river can be diverted to Pennar, Cauvery and Vaigai river basins and in this about 150 T.M.C. ft. of water can be diverted to the Cauvery and Vaigai river basins in Tamil Nadu. This study also recommends for construction of a reservoir in Andhra Pradesh to store about 200 T.M.C. ft. of diverted water for the present and 300 T.M.C. ft. in future. The Hon'ble Union Minister (WR, RD & GR) directed the CWC to examine the proposals of NWDA and WAPCOS.

The Government of Tamil Nadu is taking all efforts to bring the interlinking of Rivers project to a reality.

2.9. Pamba - Achankoil - Vaippar Link

2.9.1. The NWDA has formulated the Pamba - Achankoil - Vaippar Link Project, which envisages diversion of 22 T.M.C. 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 power of 500 M.W. for Kerala.

2.9.2. The Government of Tamil Nadu has given its acceptance in 1995 to the proposal. The Government of Kerala is not in favour of this project.

2.9.3. In the meetings of the Special Committee for Inter linking of Rivers, the Government of Tamil Nadu has been emphasising that National Water Development Agency (NWDA) should be instructed to prepare the Detailed Project Report (DPR) for Pamba – Achankoil - Vaippar link immediately.

2.9.4. The Hon'ble Chief Minister in the Memorandum presented to the Hon'ble Prime Minister of India on 27.2.2017 has, among others, reiterated the demand for

the implementation of Pamba - Achankovil - Vaippar link.

2.9.5. The Hon'ble Chief Minister in letter dated 24.05.2017 to the Hon'ble Prime Minister of India, among others, stated that the Government of Kerala which cooperated with the preparation of the Feasibility Report for the scheme is now reluctant to give its concurrence to prepare the Detailed Project Report, although the project is mutually beneficial to both the States and requested the Hon'ble Prime Minister of India to advise the Government of Kerala to accord its concurrence in the national interest.

The Government of Tamil Nadu is taking all efforts through NWDA, Special Committee for Inter linking of Rivers and Government of India for the implementation of this Project.

3.0. Flagship Programmes

3.1. Kudimaramath Scheme

To restore water bodies through user communities, the Government decided to revive “Kudimaramath Scheme”. Kudimaramath works include maintenance works in supply channels, canals, tanks, shutters, strengthening and reconstruction of surplus weirs, sluices, etc.

In Kudimaramath, works are implemented through Farmers’ Organizations / Council / Ayacutdars / Group of Ayacutdars on nomination basis; 10% of the estimate cost is borne by the Farmers’ Organizations / Council / Ayacutdars / Group of Ayacutdars in the form of labour or material or cash.

As an initiative, the Government accorded Administrative Sanction for the implementation of “Kudimaramath works” on pilot basis for the year 2016-17 and sanctioned a sum of Rs.100 crore for 1,519 works covering 30 Districts. Out of

this, 1,513 works were completed and 6 works have been proposed to be dropped due to various reasons.

For the year 2017-18, estimates have been revised in a comprehensive manner for 1,511 works at a cost of Rs.328.95 crore by including all the components required for rehabilitation of Tanks by incorporating the Schedule of Rates for 2017-18 with GST and Administrative Sanction has been accorded. The District wise details of works are as below:

(Rs.in lakh)

Sl. No	District	No. of works	Estimate Amount
1	Ariyalur	19	373.30
2	Coimbatore	34	494.00
3	Cuddalore	55	1150.00
4	Dharmapuri	10	327.35
5	Dindigul	21	445.00

Sl. No	District	No. of works	Estimate Amount
6	Erode	53	899.10
7	Kancheepuram	31	688.10
8	Kanyakumari	39	583.00
9	Karur	22	357.40
10	Madurai	128	3110.11
11	Nagapattinam	51	800.00
12	Namakkal	23	737.50
13	Perambalur	15	175.00
14	Pudukkottai	29	921.70
15	Ramanathapuram	64	3119.65
16	Salem	31	979.70
17	Sivagangai	104	2464.34
18	Thanjavur	70	1109.45
19	Theni	5	192.00

Sl. No	District	No. of works	Estimate Amount
20	Tiruppur	159	1495.50
21	Tiruvallur	66	1461.90
22	Tiruvarur	41	510.05
23	Thoothukudi	22	954.05
24	Thiruvannamalai	34	850.00
25	Tirunelveli	144	3414.60
26	Trichy	65	967.30
27	Vellore	62	1167.90
28	Villupuram	55	1250.00
29	Virudhunagar	59	1897.25
	TOTAL	1511	32895.25

3.2. Issue of Vandal

The Amendment to Rule 12(2) and 12 (2-A) (a) of the Tamil Nadu Minor Minerals Concession Rules, 1959 made on

27.04.2017 allows any person engaged in making of pots, public for bonafide domestic purpose and the farmers for agriculture purpose in the same village or in the adjoining villages of the tanks, channels and reservoirs (except Chennai, Kancheepuram and Tiruvallur Districts) to take the clay, silt, savudu and gravel from the beds of tanks, channels and reservoirs at free of cost in the notified water bodies after obtaining prior permission from the concerned District Administration. By this, the restoration of the lost capacities of the water bodies can also be achieved.

The quantity of silt and clay permitted for agricultural purpose shall not exceed 75 cubic metre per acre (185 cubic metre per hectare) for wet lands and 90 cubic metre per acre (222 cubic metre per hectare) for dry lands, once in two years. The quantity of earth, savudu and gravel for domestic purposes shall not exceed 30 cubic metre.

The quantity of clay permitted for pottery shall not exceed 60 cubic metre.

In the State, 61.447 M.Cum of vandal earth has been issued to 5,37,756 beneficiaries. In WRD, 14.412 M.Cum of vandal earth has been issued to 1,01,618 beneficiaries.

3.3. Athikadavu Avinashi scheme

The Government have accorded Administrative Sanction for Implementation of Athikadavu Avinashi scheme as Irrigation, Groundwater recharge and drinking water supply scheme in Coimbatore, Tiruppur and Erode Districts by pumping at an estimated cost of Rs.1652.00 crore under State fund in a DBOT basis.

It is proposed to construct an intake structure across river Bhavani at 230m downstream of Kalingarayan anicut. From the intake structure it is proposed to convey water by pumping through pipeline.

This Project mainly aims at providing irrigation facilities to the drought prone areas and ground water depleted areas of Coimbatore, Tiruppur and Erode Districts. It is proposed to feed 32 Public Works Department tanks, 42 Panchayat Union tanks and 971 percolation ponds.

To meet out the expenditure towards power consumption, a proposal prepared at an estimated cost of Rs.137.00 Crore for incorporating Solar Power Project in the Athikadavu - Avinashi Scheme to generate power using solar energy and given to the nearest TNEB Substation, is under consideration.

3.4. Inter - linking of Tamiraparani - Karumeniyar - Nambiyar Rivers

This scheme is proposed for inter-linking of Tamiraparani, Karumeniyar and Nambiyar rivers by excavating a new flood Carrier Canal to utilize 2,765 M.cft. of surplus water. The ayacut beneficial under this scheme is 33,298.07 acre in

Tirunelveli District and 23,610.73 acre in Thoothukudi District.

The Government of Tamil Nadu accorded Administrative Sanction for the scheme at an estimated cost of Rs.369.00 crore in anticipation of funding assistance from Government of India under AIBP. The scheme has been sanctioned for implementation in 4 stages, each stage comprising 18 packages.

As per the revised alignment, the length of flood Carrier Canal is 62.225 km in Tirunelveli District and 12.95 km in Thoothukudi District.

Revised Administrative Sanction for the Part of the scheme was accorded at an estimated cost of Rs.543.32 crore on 13.04.17 covering the works in Stage I & II and land Acquisition works in Stage I to IV.

Present status of Stage - I & II works

	Stage - I	Stage - II
Total No. of Packages	18	18
Works Completed	10	10
Works in progress	08	08

Details of Land Acquisition Works

Administrative Sanction was accorded for Land Acquisition and Land transfer works of the scheme in Tirunelveli District.

Six Land acquisition units are formed for land acquisition works with six Tahsildars and other staff with a total sanctioned strength of 87 and extended upto 30.09.2018.

Permission was granted to acquire lands under Stage III and Stage IV. Accordingly, consent letters from the land owners were obtained for 70% of land to be acquired for the Stage I to IV.

As per Revised Land Plan Schedule, the total land required for the scheme is 3074.70 Acres (1244.28.7 Ha.). So far, 432.397 Acres (174.98.5 Ha.) have been acquired.

Government of India Funding Assistance – Approval accorded

The Central Water Commission, New Delhi approved the Revised Cost Appraisal for Rs.872.45 crore (Price level 2014-2015) on 07.05.2015.

The Ministry of Water Resources, River Development and Ganga Rejuvenation, Government of India accorded the Investment clearance for Rs.872.45 crore on 19.04.2016.

The Hon'ble Chief Minister has taken special initiatives to obtain funding assistance from Government of India. The Hon'ble Chief Minister presented a Memorandum "Seeking Support on Water Resources Issues and for Irrigation Projects" to the Hon'ble Union Minister of Road Transport, Highways & Shipping,

Water Resources, River Development and Ganga Rejuvenation, Government of India on 23.11.2017 & 25.02.2018, in which the Government of India funding assistance for the scheme under LTIF of PMKSY – AIBP was requested.

The Government of Tamil Nadu has submitted the funding proposal under PMKSY – AIBP to the Government of India on 31.01.2018 for the scheme.

3.5. Desilting of Dams and Water Bodies

The process of restoring the original capacity of reservoirs and Anicuts in a phased manner has been initiated by the Government. As desilting of major water bodies is a new attempt in the State, it has been decided to undertake the preliminary process for desilting on pilot basis.

M/s. WAPCOS Ltd., was entrusted the consultancy services on 22.09.2014. The consultancy services include preparation of the Detailed Project Report (DPR), Rapid Environment Impact Assessment (REIA)

Study, Tender Documents and evaluation, obtaining clearances from Government of India including Funding Assistance, Project Management Consultancy Services and Post Project Evaluation study.

The status of the above tasks are as under:

(Rs. in crore)

Sl. No.	Name of the Water body	Consultancy Charges	Present Status
1.	Vaigai Reservoir	1.629	<ul style="list-style-type: none"> • Final DPR approved by TAC. • REIA study is under progress. • Detailed Estimate for Rs.101.02 crore under Revenue model for desilting is under scrutiny.
2.	Pechipparai Reservoir	1.629	<ul style="list-style-type: none"> • Final DPR approved by TAC. • REIA study is under progress. • Detailed Estimate for Rs.132.60 crore for desilting is under scrutiny.

Sl. No.	Name of the Water body	Consultancy Charges	Present Status
3.	Mettur Reservoir	2.079	<ul style="list-style-type: none"> • Final DPR is under preparation. • REIA study is under progress.
4.	Amaravathy Reservoir	1.685	<ul style="list-style-type: none"> • Final DPR approved by TAC. • REIA study is under progress. • The DPR for an amount of Rs.87.22 crore is under scrutiny towards obtainable revenue for an amount of Rs.111.18 crore.
5.	Srivaikundam Anicut*	1.326	<ul style="list-style-type: none"> • Final DPR approved by TAC • Detailed Estimate prepared for Rs. 5.93 crore for desilting.
	TOTAL	8.348	

Restoration of Srivaikundam Anicut to its original capacity at an estimated cost of Rs.5.93 crore was commenced on 25.08.2015 as per the directions of the National Green Tribunal. 50% of work has been completed and the work is temporarily stopped on 11.08.2016 as per the stay Order of the Court.

Desilting of other Water bodies

(Rs. in crore)

Sl. No.	Name of the Water body	Estimate Amount	Present Status
1.	Parappalar Reservoir	19.50	Stage I approval accorded by MoEF & CC. Sanction of Special fund of Rs.66.95 lakhs for making deposit to Forest Department for development of catchment area is under consideration.

Sl. No.	Name of the Water body	Estimate Amount	Present Status
2.	Veeranam Tank	40.00	75% of work has been completed. Further work is in Progress.

3.6. PMKSY - Modernisation of Grand Anicut Canal under AIBP

The Central Water Commission, Government of India have issued In-principle consent for the concept paper on "Improvements and Rehabilitation of Irrigation Systems in Cauvery Basin for Efficient Irrigation Management" for an estimated amount of Rs.11,420 crore.

Due to the high value of the project, it was decided to split up the Rs.11,420 crore proposal into 9 segments viz, Grand Anicut system, Kattalai High Level Canal Project, Cauvery Sub Basin, Vennar Sub Basin, Lower Coleroon Sub Basin, Lower Bhavani Project, Noyyal Sub Basin, Rajavoikkal Project and Ground water

Recharge Scheme and approach the Government of India for availing the grant in stages.

As a first phase, the DPR for “ERM of Grand Anicut Canal Sub-basin” at an estimated cost of Rs.2,298.75 crore has been approved by the Central Water Commission, Government of India in 130th Technical Advisory Committee meeting on 30.09.2016.

Based on the concurrence given by the State Government, the Ministry of Water Resources, River Development & Ganga Rejuvenation has given the Investment Clearance on 05.05.2017 and officially communicated on 17.07.2017.

The Government have sent the Detailed Project Report for the work of “Extension Renovation and Modernization (ERM) Project of Grand Anicut Canal system in Cauvery Basin for efficient Water Management in Tamil Nadu” prepared in 15 packages for an amount of Rs.2158.68 crore (2017-18 price level) to the Ministry

of Water Resources, River Development & Ganga Rejuvenation on 05.04.2018 for posing under Long Term Irrigation Fund in NABARD under AIBP included in PMKSY.

The Government of Tamil Nadu accorded Administrative Sanction on 03.05.2018 for this project.

3.7. Cauvery Basin Modernisation Scheme under National Project.

The Government of India extends financial assistance for bridging the gap of irrigation area of more than 2,00,000 hectare for implementation as a National Project.

The Government of Tamil Nadu requested techno-economic and investment clearances from the Government of India for the proposal of "Improvements, and Rehabilitation of the Irrigation systems in the Cauvery Basin" at an estimated cost of Rs.14,500 crore (2016-17 price level) under National Project.

The Central Water Commission on 17.05.2017 advised to send remaining 8 Detailed Project Reports as per latest Guidelines for submission, Appraisal and Acceptance of Irrigation and Multipurpose Projects, 2017 and laid down procedures for Cauvery sub basin, Vennar sub basin, Lower Coleroon sub basin, Lower Bhavani Project, Kattalai High Level canal Project, Noyyal Sub Basin, Rajavoikkal Project and Ground Water Recharge Scheme (other than Grand Anicut canal system).

Detailed Project Reports (DPR) for 8 packages is under preparation and scrutiny of the Department. After finalization, Detailed Project Report will be sent to Advisory Committee of Ministry of Water Resources, River Development & Ganga Rejuvenation.

4.0. State Funded Schemes

4.1. Creation of new Irrigation Infrastructure – Ongoing works

3 New Reservoirs in Perambalur, Tiruvallur and Vellore Districts are under formation at an estimated cost of Rs.483.75 crore.

The details of these works are as follows:

Formation of new reservoir at Kannankottai Village, by merging the existing two tanks, viz., Kannankottai Hissa Rajaneri tank and Thervaikandigai tank in Tiruvallur District at an estimated cost of Rs.330.00 crore is in progress. It is proposed to store 1 T.M.C. ft. in 2 fillings for drinking water supply to Chennai city and to provide assured irrigation facilities to the existing ayacut of 696 acres. So far 76% of work has been completed.

Formation of a New Reservoir across Marudaiyar River near Kottarai Village in Alathur Taluk in Perambalur District at an estimated cost of Rs.124.20 crore is in progress. By implementing this scheme an ayacut of 4,194 acres will be benefited. So far, 65% of work has been completed.

Formation of Earth dam and construction of spillway and river sluices across Malattar river near Bathalapalli Village in Gudiyatham Taluk in Vellore District at an estimated cost of Rs.29.55 crore is under implementation. By implementing this scheme, an ayacut of 4,243 acres will be benefitted.

Further, 3 new supply channels in 2 Districts viz., 2 in Tirunelveli and 1 in Ramanathapuram are in progress at an estimated cost of Rs.21.80 crore. By implementing these schemes, an ayacut of 13,380 acres will be benefited.

(Rs. in crore)

Sl. No.	Name of Work	Estimated Cost
1.	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 in Ramanathapuram District	18.00
2.	Construction of a Storm Water and Drainage Channel parallel to the right side retaining wall along the road side from Thidiyur Village to downstream of Pachaiyar weir in Palayamkottai Taluk in Tirunelveli District	2.20
3.	Construction of a Weir at LS 2,046m across Kannadian Channel to divert the drainage water of Kallidaikuruchi town in Ambasamudram Taluk in Tirunelveli District	1.60

Formation of a Groyne at Keelavaippar in Vilathikulam Taluk in Thoothukudi District at an estimated cost of Rs.11.75 crore is in progress.

Construction of Keeranur sub division office building of south vellar division in Pudhukottai District at an estimated cost of Rs.0.40 crore will commence soon.

Administrative Sanction was accorded for Rs.31.34 crore for land acquisition process for the work of Construction of new barrage in Coleroon River mile 74/3 at Adhanur-Kumaramangalam in Cuddalore and Nagapattinam Districts.

Administrative Sanction has been accorded for land acquisition process and for carrying out detailed investigation work for an amount of Rs.5.40 crore for the scheme of diversion of flood water of Ramanadhi at Ambasamudram Taluk to the ayacut areas of Jambunadhi in Tenkasi and Alangulam Taluks in Tirunelveli District. Detailed investigation works have been completed. Detailed Project report has been prepared for this scheme. Land acquisition work is in progress.

4.2. Rehabilitation of existing Irrigation Infrastructure – Ongoing works

Flood Protection Works in Kancheepuram District at an estimated cost of Rs.23.50 crore, Renovation of 4 Tanks in 2 Districts, viz, Kancheepuram and Tiruvallur Districts at an estimated cost of Rs.130.00 crore, Rehabilitation and improvement works in Mullai Periyar Dam in Idukki District at an estimated cost of Rs.7.85 crore, Strengthening the slipped portions of Kandaleru Poondi Canal in Tiruvallur District at an estimated cost of Rs.2.67 crore and Extension and Rehabilitation of approach road leading to Butterfly Park in Tiruchirappalli District at an estimated cost of Rs.1.94 crore are in progress.

The details of these works are as below:

Rehabilitation and restoration of the flood damaged Adyar River and its tributaries by widening, desilting and standardization of the river regime in Kancheepuram District at an estimated cost of Rs.19.00

crore is in progress. So far, 96% work has been completed. Rehabilitation and restoration of the flood damaged Vegavathi River in the Kancheepuram town limit at an estimated cost of Rs.4.50 crore is in progress. So far, 70% work has been completed.

Creation of Additional Water storage in four tanks (Cholavaram Tank, Porur Tank, Nemam Tank and Ayanambakkam Tank) and Restoration of additional storage space in Chembarambakkam Tank in Kancheepuram and Tiruvallur Districts at an estimated cost of Rs.130.00 crore are in progress.

Strengthening of Baby Dam by providing RCC backing and instrumentation for Main Dam and Baby Dam of Mullai Periyar Dam in Idukki District in Kerala at an estimated cost of Rs.7.85 crore has been taken up, in which 5 works were completed and for remaining 3 works will be commenced after getting environmental clearance

from the Ministry of Environment, Forest and Climate Change, Government of India and Kerala Forest Department.

Strengthening the slipped portions at LS 10.685 Km, 17.425 Km, 17.521 Km, 18.650 Km and 19.220 Km of Kandaleru Poondi Canal in Uthukottai Taluk in Tiruvallur District at an estimated cost of Rs.2.67 crore is in progress.

Extension and Rehabilitation of approach road leading to Butterfly Park in Melur village in Srirangam Taluk in Tiruchirapalli District at an estimated cost of Rs.1.94 crore is in progress.

Strengthening of the severely damaged portions from LS 0 Km to 14.175 Km (at LS 800m, LS 1985m, LS 2829m, LS 4217m, LS 13794m and LS 13800m) of the Krishna Water Supply Project Feeder Canal in Tiruvallur District at an estimated cost of Rs.1.44 crore is in progress.

Administrative Sanction has been accorded for Rs.3.00 crore on 04.05.2018 to execute the work of restoration of the damaged shutter No. 1 of K.R.P. dam in Krishnagiri District and the work has been commenced.

Works to be commenced

Renovation of Dormitory Block - II at Thekkady in Idukki District at an estimated cost of Rs.0.50 crore will commence soon.

5.0. NABARD Assisted Schemes

5.1. Creation of New Irrigation Infrastructure – Ongoing Works

4 Anicuts at an estimated cost of Rs.26.80 crore, 6 Check Dams at an estimated cost of Rs.85.21 crore, 2 Canals at an estimated cost of Rs.9.40 crore, 1 New tank at an estimated cost of Rs.17.38 crore, 1 Coastal Protection work, 1 Bridge and 1 causeway at an estimated cost of Rs.18.78 crore in Dindigul Kancheepuram, Kanyakumari, Karur, Madurai Perambalur, Sivagangai, Thoothukudi, Tiruppur, Tiruvallur Tiruvannamalai and Virudhunagar Districts are in progress. By implementing these schemes, an extent of 12,856.00 acres will be benefited. Some of the major works are as follows:

Anicuts

(Rs. in Crore)

Sl. No	Name of Work	Est. Amt	Ayacut Benefited (in acre)	Status
1	Construction of an Anicut across Cheyyar River near Vengancheri Village in Uthiramerur Taluk of Kancheepuram District	8.00	810	79%
2	Construction of an Anicut across Kallar River near V.Kalathur Village to feed Ayanperaiyur Tank and Keeranur Tank in Veppanthattai Taluk of Perambalur District	8.00	471	25%
3	Construction of an Anicut across	7.30	588	20%

Sl. No	Name of Work	Est. Amt	Ayacut Benefited (in acre)	Status
	Cheyar River near Anaivadi Village to feed Karaipoondi tank and Koralpakkam tank in Polur Taluk (Kalasapakkam) of Tiruvannamalai District			
4	Construction of an Anicut across Kowshikanadhi in Avudaiyapuram Village to feed Kaalaperumalpatti tank in Virudhunagar Taluk of Virudhunagar District	3.50	292	65%
Canals				
1	Linking of Parambikulam Aliyar Project System to Uppar	8.10	6060	92%

Sl. No	Name of Work	Est. Amt	Ayacut Benefited (in acre)	Status
	Canal in Dharapuram Taluk of Tiruppur District			
2	Formation of a Branch Channel to Nedumadurai Tank and Thottiyapatti Tank from Nilayur Extension Channel in Thirupparankundram Taluk of Madurai District	1.30	906	77%

Check Dams

- Construction of a Check dam across Tamirabarani River near Mukkani in Serndamangalam Village in Srivaikundam Taluk of Thoothukudi District at an estimated cost of Rs.25.75 crore. This Check dam will help to store a part of surplus water besides preventing surface and subsurface intrusion of sea water into the river. 990 acres of land in Mukkani and Serndamangalam villages will be

benefitted by this scheme. So far, 60% of work has been completed.

- Construction of a Check dam across Kosasthalaiyar River in Pattaraiperumpudur Village to channelise water to Arulmigu Veeraraghavaperumal Temple Tank in Tiruvallur Taluk and District at an estimated cost of Rs.25.00 crore. This site lies in the over exploited zone. By the construction of this Check dam, the groundwater table will be raised near the Check dam site and also in and around the tank in Thiruvallur town. Water from the Check dam is diverted through a RCC box type channel of length 13 km to fill the temple tank. So far, 40% of work has been completed.
- Construction of an Anicut across Kowshikanadhi in Avudaiyapuram Village to feed Kaalaperumalpatti tank in Virudhunagar Taluk of Virudhunagar District at an estimated cost of Rs.15.16 Crore is in progress. So far, 94% of work has been completed.

- Construction of a Check dam across Vaigai river near Thirupuvanam Town Panchayat in Thirupuvanam Taluk of Sivagangai District at an estimated cost of Rs.10.00 Crore is in progress. 1330 acres of land will be benefitted by implementing this scheme. So far, 95% of work has been completed.
- Construction of a Check Dam across Kosasthalaiyar River near Attrampakkam Village in Uthukottai Taluk of Tiruvallur District at an estimated cost of Rs.7.00 Crore is in progress. 356 acres of land will be benefitted by implementing this scheme. So far, 30% of work has been completed.
- Construction of a Check dam across Uppar River of Periyakumarapalayam Village in Dharapuram Taluk of Tiruppur District at an estimated cost of Rs.2.30 Crore is in progress. 249 acres of land will be benefitted by implementing this scheme. So far, 60% of work has been completed.

New Tanks

- Formation of a New Tank across Nallathangal Odai near Kothayam Village of Oddanchatram Taluk of Dindigul District at an estimated cost of Rs.17.38 Crore is in progress. 804 acres of land will be benefitted by implementing this scheme. So far, 80% of work has been completed.

Coastal protection works

Construction of Groyne at Mandaikaduputhur in Kalkulam Taluk of Kanyakumari District at an estimated cost of Rs.7.82 Crore is in progress. So far, 45% of work has been completed.

Construction of Bridge

Reconstruction of Single Lane Bridge across the Buckingham Canal in Paramankeni Village of Cheyyur Taluk of Kancheepuram District at an estimated cost of Rs.9.97 Crore is in progress. So far, 90% of work has been completed.

Construction of Causeway Bridge

Construction of causeway across Palar near Mattumandai in Palani Taluk of Dindigul District at an estimated cost of Rs.0.99 Crore is in progress. So far, 90% of work has been completed.

5.2. Creation of New Irrigation Infrastructure – Works to be taken up

1 Tail End Regulator at an estimated cost of Rs.9.77 crore, 12 Check Dams at an estimated cost of Rs.51.52 crore, 1 New tank, 1 Bridge and 1 Head sluice at an estimated cost of Rs.65.14 crore, in Ariyalur, Dindigul, Erode, Nagapattinam, Ramanathapuram, Sivagangai, Thanjavur, Thoothukudi, Tirunelveli, Tiruppur, Tiruvallur, and Virudhunagar Districts will commence soon. By implementing these schemes, an extent of 9967.36 acres, 555 Openwells & Borewells will be benefited.

Details of works are as follows:-

- Formation of a Tank across Jungle stream near Kanakkampalayam village in Gobi

Taluk of Erode District at an estimated cost of Rs.64.20 crore. The Tank will provide irrigation facilities for the dry land lying on both sides of the odai in Kanakampalayam village. 1800 acres of cultivable land and 492 Openwell & Borewells will be benefited by implementation of this scheme.

- Construction of Tail End Regulator across Kittianai Uppanar at LS 7.100 Km in Pudupattinam village (nearby Thargas Anjaneyar temple back side) of Sirkali Taluk of Nagapattinam District at an estimated cost of Rs.9.77 crore. Surplus water received from catchment area of Uppanar and Pudumanniar can be stored, which will recharge and improve the quality of Groundwater. The sea water intrusion and the entry of saline water into the fields will be prevented, thereby fertility of lands will be protected during flood times.
- Construction of Checkdam across Vaigai River at LS 35.05 km in Chithargalnatham village of Nilalottai Taluk of Dindigul

District at an estimated cost of Rs.12.30 crore. By implementing this scheme, about 290.40 acres of ayacut will be benefited through 26 number of wells.

Other works are listed below:

(Rs. in crore)

Sl. No	Name of Work	Est. Amt	Ayacut Benefited (in acre)
1	Construction of Check dam across Kosasthalaiyar river in between Pudhukuppam and Kuthiraipallam village in Ponneri Taluk of Thiruvallur District	9.90	988
2	Construction of a new checkdam across Tamiraparani river near Agaram Kudiyiruppu in Vallanadu village of Srivaikundam Taluk of Thoothukudi District	12.29	2347,3 irrigation wells,60 drinking wells
3	Construction of checkdam across Nanganjiyar river in S.F. No.605 in Virupakshi village of Oddanchatram Taluk of Dindigul District	1.31	260.14
4	Construction of dividing dam across Kalingalar at offtake point of Gudalurkulam in Naranapuram village in Sivagiri Taluk of Tirunelveli District	1.39	1228

Sl. No	Name of Work	Est. Amt	Ayacut Benefited (in acre)
5	Construction of check dam across Karumeniyar river in Pallakurichi village of Sathankulam Taluk of Thoothukudi District	2.84	195
6	Construction of checkdam across Uppodai river in M.Chokkalingapuram village in Sathur Taluk of Virudhunagar District	1.15	117
7	Construction of checkdam across Gundar river near Kakkudi village in Kamudi Taluk of Ramanathapuram District	3.80	709.47
8	Construction of checkdam across Uppodai in Nalli village (near Swaminatham village) in Sathur Taluk of Virudhunagar District	1.20	149.48
9	Construction of checkdam across Kodaganar river near Velakavundanpatti village in Seevalsaragu village in Athur Taluk of Dindigul District	1.82	187.07
10	Construction of checkdam across Ayyanapuram vari in S.F. No.28/88 in Vendayampatti village in Budalur Taluk of Thanjavur District	2.605	629.27

Sl. No	Name of Work	Est. Amt	Ayacut Benefited (in acre)
11	Construction of checkdam across Periyakarai Odai in S.F. No.453 of Chinnamuthur village in Kangeyam Taluk of Thiruppur District	0.90	22.13
12	Construction of Bridge across Ponnar Main channel at LS 10.70 Km in Sripuranthan village of Udayarpalayam Taluk of Ariyalur District	0.67	-
13	Construction of Mangudi tank head sluice offtakes from Girudhumal river in Thiruppuvanam Taluk of Sivagangai District	0.27	1044.40

5.3. Rehabilitation of Existing Irrigation Infrastructure – Ongoing Works

6 anicuts including 10 Tanks at an estimated cost of Rs.14.62 crore, 6 Channels at an estimated cost of Rs.112.69 crore, One tank at an estimated cost of Rs.0.7 crore, 5 Flood Protection works at an estimated cost of Rs.140.01

crore and One Coastal protection work at an estimated cost of Rs.3.00 crore in Cuddalore, Erode, Nagapattinam, Namakkal, Salem, Tiruchirapalli, Tirunelveli, Viluppuram and Kanniyakumari Districts are in progress. By implementing these schemes, an extent of 54,887 acres will be benefited.

Works which are in progress are tabulated below:

(Rs.in crore)

S. No.	Name of Work	Est. Amt.	Ayacut benefitted (Acres)	Status
Anicuts and Tanks				
1	Rehabilitation of 6 anicuts constructed across Sarabanga River and its Channels and 10 tanks in Sarabanga basin in Omalur Taluk in Salem District.	14.62	2317	12% of work completed.

S. No.	Name of Work	Est. Amt.	Ayacut benefitted (Acres)	Status
Canals/Supply channels/Drains				
1	Rehabilitation of Kallingarayan Channel from LS mile 9/7 to mile 12/5-348 in Erode Taluk in Erode District.	36.75	16238	95% of work completed.
2	Rehabilitation of Mettur east Bank Canal from LS 45.303km to 58.000km in Kumarapalayam Taluk in Namakkal District.	25.00	7481	85% of work completed.
3	Rehabilitation of Mettur west bank canal from LS 7.283km to 13.92km in Mettur Taluk in Salem District.	25.00	14672	70% of work completed.
4	Lining the Tirunelveli Channel and improvement to Sluices of the	15.00	2000	73% of work completed.

S. No.	Name of Work	Est. Amt.	Ayacut benefitted (Acres)	Status
	Tirunelveli Channel in Tirunelveli District.			
5	Rehabilitation and Reconstruction works in Kolianur Channel in Villupuram Taluk in Viluppuram District.	8.00	1349	65% of work completed.
6	Rehabilitation of Mankondanar drain near Thagattur Village in Vedaranyam Taluk in Nagapattinam District.	2.94	10830	75% of work completed.
Tanks				
1	Permanent Rehabilitation of the damaged portions of Maniyankurichi Tank in Maniyankurichi Village of	0.70	141	75% of work completed.

S. No.	Name of Work	Est. Amt.	Ayacut benefitted (Acres)	Status
	Mannachanallur Taluk in Tiruchirapalli District.			
Flood Protection works				
1	Permanent flood protection works to Paasimuthan Odai, Thillaiamman Odai, Omakulam Drain, Khan Sahib Canal and Muthiahpillai Surplus in Chidambaram Taluk in Cuddalore District.	25.00		60% of work completed.
2	Rehabilitation and Strengthening of Gadilam River from Visoor Village to Devanampattinam Village in Cuddalore District.	22.50		70% of work completed.
3	Rehabilitation and Strengthening of	14.60		60% of work

S. No.	Name of Work	Est. Amt.	Ayacut benefitted (Acres)	Status
	Visoor odai and Periyakattupalayam odai in Panruti Taluk in Cuddalore District.			completed.
4	Rehabilitation and Improvements to Velapakkam Channel in Panruti and Cuddalore Taluks in Cuddalore District.	2.91		50% of work completed.
5	Improvements to increase the carrying capacity of Manavaikkal and Old Coleroon to avoid flood damages in Kattumannarkoil and Chidambaram Taluks in Cuddalore District	75.00	-	58% of work completed.
Coastal Protection work				
1	Rehabilitation of	3.00		77% of

S. No.	Name of Work	Est. Amt.	Ayacut benefitted (Acres)	Status
	the Rubble Mound Sea wall in Eraviputhenthurai Village of Vilavancode Taluk in Kanniyakumari District.			work completed.

5.4. Rehabilitation of Existing Irrigation Infrastructure – Works to be taken up

2 Reservoirs at an estimated cost of Rs.6.115 crore, 3 Canal works at a total estimated cost of Rs.69.6482 crore, rehabilitation of sluice shutters in Grand Anicut at an estimated cost of Rs.8.53 crore, one Coastal Protection work at an estimated cost of Rs.1.95 crore, one road culvert at an estimated cost of Rs.0.27 crore and one Trash rack at an estimated cost of of Rs.2.48 crore will commence soon in Coimbatore, Salem, Palghat (Kerala), Thiruvavarur, Tiruppur,

Kanniyakumari and Karur Districts. By implementing these schemes, an extent of 90,317 acres will be benefitted.

Some of the major works are:

(Rs. in crore)

Sl. No.	Name of Work	Est. Amt.	Ayacut Benefited (Acres)
Canal and Reservoirs			
1	Rehabilitation of Mettur East Bank Canal from LS 14000m to 31400m in Edappadi & Sankagiri Taluks in Salem District.	48.8632	9039
2	Modernisation of Vadavar Extension channel from RD 0/0-1/3465 (LS.0.00Km to 4.10Km) in Mannargudi Taluk in Thiruvarur District.	9.74	21170
3	Upgradation and Modification of old wooden shutters to steel screw gearing shutters and renewal of damaged steel shutters with worm	5.14	1792

Sl. No.	Name of Work	Est. Amt.	Ayacut Benefited (Acres)
	gear and worm wheel arrangements in Kattalai High Level canal (KHLC) and New Kattalai High Level Canal (NKHLC) in Valayapatti, Inungur and Nachalur Villages in Kulithalai Taluk in Karur District.		
4	Rehabilitation of Left out reaches in Udumalpet main canal from LS 0.000 km to 16.600 km and its distributaries in Udumalpet Taluk in Tiruppur District.	4.93	58315.60
5	Rehabilitation to the 16 vents in Ellis saddle and repair to the shutter in the vent No. 5 of the low level sluice in Stanley Reservoir at Mettur dam in Salem District.	0.975	-
6	Rehabilitation of	8.53	-

Sl. No.	Name of Work	Est. Amt.	Ayacut Benefited (Acres)
	Sluice Shutters in Grand Anicut in Thanjavur District.		
Coastal Protection Works			
1	Reformation of RMS wall at Chinnathurai in Vilavancode Taluk in Kanniyakumari District.	1.95	-
High Level Bridge			
5	Reconstruction of a road culvert across Periyakalanthai to Vadachittur road in Vadachittur branch canal at LS 9.010 km of Periyakalanthai village, Kinathukadavu Taluk in Coimbatore District.	0.27	-

Sl. No.	Name of Work	Est. Amt.	Ayacut Benefited (Acres)
Rehabilitation and Improvement of Leading channel in Sarkarpathy Power Tunnel (SPT)			
6	Rehabilitation and Improvement of Trash rack at LS 4000 feet of Leading channel, Pentagonal trash rack at Sarkarpathy Power Tunnel (SPT) and Construction of Boundary wall from LS 4000 feet to Sarkarpathy Power Tunnel (SPT) of Thunacadavu Dam of Thunucadavu in Chittur Taluk in Palghat (Kerala) District.	2.48	-

6.0. Externally Aided Projects

6.1. World Bank Assisted Dam Rehabilitation and Improvement Project (DRIP)

The Dam Rehabilitation and Improvement Project is under implementation to ensure the strength, safety and operational performance of the existing Dams in a sustainable manner, by the Water Resources Department (WRD), Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) and Agricultural Engineering Department (AED).

It is proposed to rehabilitate 69 WRD dams and 38 TANGEDCO dams. The implementation period which commenced in 2012 has been extended upto June 2020. The funding pattern between the World Bank and the State is in the ratio of 80:20. The total cost of the project is Rs.745.49 crore.

Sl. No.	Department	US\$ in Million	Rs. in crore
1	Water Resources Department	97.91	469.94
2	Agricultural Engineering Department	3.21	15.41
3	TANGEDCO	54.19	260.14
	TOTAL	155.31	745.49

Present status

WRD Dams

Administrative Sanction has been accorded for 69 dams. So far, works have been completed in 60 dams (Except installation of instrumentation). Works in 9 dams are in progress.

- The details of these 9 dams are as follows:

(Rs. in crore)

Sl. No.	Name of the Dam	District	Est. Amt.
1	Manimukthanadhi	Villupuram	71.16
2	Red Hills	Thiruvallur	2.32
3	Cholavaram	Thiruvallur	2.47
4	Manimuthar	Tirunelveli	17.97
5	Ramanadhi	Tirunelveli	1.77
6	Pechiparai	Kanniyakumari	61.30
7	Vaigai	Theni	7.68
8	Kariakoil	Salem	2.84
9	Uppar	Thiruppur	7.85
	TOTAL		175.36

Sedimentation Studies

From the year 2013-14 to 2017-18, Administrative sanction has been obtained for 56 dams for conducting sedimentation studies out of which studies have been completed in 31 dams. In 11 dams all

survey works have been completed and documentation is in progress.

Further, it is proposed to take up sedimentation studies in 13 dams (9 WRD & 4 TANGEDCO) at a cost of Rs.66.00 lakhs will commence soon.

TANGEDCO Dams

Out of 38 dams, Administrative sanction has been accorded for 20 dams. Works have been completed in 8 dams and works are in progress in 10 dams. Work will be commenced in Pegumbahalla dam and tender is under scrutiny for Upper Bhavani dam.

Agricultural Engineering Department works

Catchment Area Treatment Works in Krishnagiri & Kundah Reservoirs at a cost of Rs.15.41 crore were carried out in three phases and all the works were completed.

6.2. Asian Development Bank (ADB) Assisted Climate Change Adaptation Programme in Cauvery Delta

The Climate Change Adaptation Programme in Cauvery Delta is under implementation at a cost of Rs.1,560 crore, out of which the assistance of Asian Development Bank (ADB) will be Rs.1,092 crore and the State Share will be Rs.468 crore. The Funding pattern of the scheme is 70:30 sharing basis between the ADB and State Government.

As a first stage of the project, Administrative sanction has been accorded for Rs.960.66 crore for Infrastructure improvement, Reconstruction and Rehabilitation works in part of Lower Vennar system in Cauvery Delta and are under implementation as detailed below:

(Rs.in crore)

S. No.	Name of the River/ Drain / Work	Est. Amt.	Present Stage of Work
I. Civil Works			
1.	Harichandranathi	257.74	30% of work completed
2.	Adappar river	168.35	30% of work completed
3.	Pandavaiyar river	100.80	72% of work completed
4.	Vellaiyar river	178.17	30% of work completed
5.	Valavanar Drain	44.62	35% of work completed
6.	Vedharanyam Canal and Uppanar Drain	32.18	45% of work completed
7.	Pumping Schemes	14.59	75% of work completed
	Sub Total	796.45	

S. No.	Name of the River/ Drain / Work	Est. Amt.	Present Stage of Work
II. Other Works			
1.	Setting up of Project Management Units, Project Implementing Units, Obtaining Environmental and Coastal Regulation Zone(CRZ) clearance, Appointment of Consultant for Environmental Impact, Resettlement cost, etc.	164.21	30% of work completed
	Total	960.66	

6.3. World Bank Assisted Tamil Nadu Irrigated Agriculture Modernization Project (TNIAMP)

Tamil Nadu Irrigated Agriculture Modernisation Project (TNIAMP) has been planned for implementation in 66 sub basins of the State covering 29 Districts for an extent of 5.43 lakh hectare over a period of 7 years starting from 2018 with

an outlay of Rs.2962 crore. This is the follow on project of the successfully completed IAMWARM Project.

The Project will be implemented by Water Resources Department and 6 line departments, Tamil Nadu Agriculture University, Tamil Nadu Veterinary and Animal Sciences University and Tamil Nadu Fisheries University. In this Project, it is proposed to take up rehabilitation of 4778 Tanks, 477 Anicuts, construction of check dams, artificial recharge wells in water spread area of tanks and improving drainage cum irrigation channels in Cauvery Delta and other sub-basins at an outlay of Rs.2131 crore, earmarked for Water Resources Department in four phases.

This project has come into effectiveness from January 2018.

Rehabilitation of Flood Affected Tanks and Irrigation Channels:

Administrative sanction has been accorded for the rehabilitation of flood affected 59

tank Systems consisting of 57 tanks and 2 Main Irrigation Channels grouped into 16 packages in 4 Districts under retro-active funding of World Bank in TNIAMP, for Rs.43.63 crore and the works are in progress.

ABSTRACT

(Rs. in Lakhs)

S. No	District	No. of Packages	Est. Amt.	Tanks	Irrigation Channels
1	Tiruvallur	3	474.20	11	--
2	Thiruvannamalai	1	90.82	--	2
3	Cuddalore	1	197.69	1	--
4	Kancheepuram	11	3600.53	45	--
	Total	16	4363.24	57	2

Phase I Works :

- Administrative sanction has been accorded for the rehabilitation of 1325 tanks, 109 anicuts and 45 artificial recharge wells in 18 sub basins grouped into 204 packages covering 22 Districts at an estimated cost of Rs.743.57 Crore, including 18 packages of Environment component at an estimated cost of Rs.1.86 crore.

ABSTRACT

Sl. No.	District	No. of Packages	Est. Amount (Rs. in Lakhs)	Tanks	Anicuts	Artificial Recharge Wells	Channel works
1	Tiruvallur	3	363.00	11	-	-	-
2	Krishnagiri	7	2287.17	36	-	-	-
3	Dharmapuri	2	816.83	-	1	-	-
4	Cuddalore	14	7157.68	88	8	8	-
5	Villupuram	2	1006.03	8	1	6	-
6	Kancheepuram	31	8638.72	219	2	8	-

Sl. No.	District	No. of Packages	Est. Amount (Rs. in Lakhs)	Tanks	Anicuts	Artemesia Recharge Wells	Canary Channel works
7	Trichy	9	3584.25	64	13	2	-
8	Pudukkottai	9	1372.04	62	1	-	-
9	Thanjavur	28	10850.37	89	24	2	-
10	Tiruvarur	7	3974.00	24	-	-	-
11	Nagapattinam	20	8620.79	2	-	-	-
12	Perambalur	1	385.53	6	-	-	-
13	Coimbatore	2	270.00	-	-	-	1
14	Erode	9	3807.00	13	27	5	-
15	Madurai	13	4019.22	150	-	1	-
16	Dindigul	7	1705.10	17	-	7	-
17	Virudhunagar	2	295.52	-	-	-	1
18	Sivagangai	2	136.85	6	-	-	-
19	Ramanathapuram	3	1916.76	53	1	-	-
20	Theni	8	2135.34	39	11	4	-
21	Tirunelveli	16	7828.74	402	18	2	-
22	Thoothukudi	9	3185.55	36	2	-	-
	Total	204	74356.49	1325	109	45	2

Out of 204 packages, works are in progress in 167 packages.

Various minor activities involved in 18 packages of environment works are being carried out by the Environment Divisions with the assistance of consultancy services at an estimated cost of Rs.1.86 Crore.

Detailed project Reports will be prepared for 18 Sub basins under Phase II.

6.4. World Bank assisted National Hydrology Project

National Hydrology Project aims to improve the extent, quality and accessibility of water resources information and to strengthen the capacity of water resources management institutions in India. The project allocation for Tamil Nadu is Rs.100 crore, as 100% Grant from the Government of India (MoWR). The State Ground and Surface

Water Resources Data Centre (SG & SWRDC) is the Nodal Agency for the implementation of the NHP in Tamil Nadu upto 2024.

Present Status :

The Memorandum of Agreement has been signed on 04.11.2016 and the Project Implementation Plan (PIP) has been approved on 16.12.2016. Administrative sanction has been accorded on 09.06.2017 and the Annual Work Plan for the year 2018-19 for an amount of Rs.25.00 crore has been sent to the Ministry of Water Resources, Government of India for approval.

7.0. Centrally Sponsored and Shared Schemes

7.1. National Agriculture Development Programme (NADP)

In Government of India assisted National Agriculture Development Programme, Construction of Checkdams, Anicuts, Bed Dams and Reconstruction of Regulators for an amount of Rs.21.00 crore, benefitting an ayacut to an extent of 2541 acres are under implementation. So far, 2 works at an amount of Rs.4.80 crore have been completed and remaining works are in progress as detailed below:

(Rs.in crore)

S. No	District	Name of Work	Est. Amt.
1.	Pudukottai	Construction of an anicut across Kozhuvanar River to feed Alathur and Vengakudi tanks in Pilluvalasai Village in Avudaiyarkoil Taluk	4.00

S. No	District	Name of Work	Est. Amt.
2.	Sivagangai	Construction of an anicut across Palar river to feed Perumi tank and other tanks in Thiruvudaiyarpatti Village in Thirupathur Taluk	2.50
3.	Thanjavur	Construction of a Check dam across Vedapuri river at LS 35.00 km in Poyundarkudikkadu Village in Orathanadu Taluk	3.00
4.	Tiruppur	Construction of a Check dam across Nallar river in S.F. No. 271 of Devanurpudur Village in Udumalpet Taluk	1.80
5.	Vellore	Construction of a Diaphragm Wall across Malattar river near Masigam Village in Gudiyatham Taluk	3.00
6.	Villupuram	Construction of an Artificial Recharge Structure across Muktha River near SF No:87 of Eduttavainatham Village of Chinnasalem Taluk	1.90
		Total	16.20

Works to be taken up:

The following 2 works of reformation of RMS Wall in Kanniyakumari District at an estimated cost of Rs.0.945 crore are to be taken up.

(Rs. in Crore)

Sl. No.	District	Name of Work	Est. Amt.
1.	Kanniya kumari	Reformation of RMS Wall to protect the houses in front of the Community hall in Vallavillaithurai Village in Vilavancode Taluk	0.490
2.	Kanniya kumari	Reformation of RMS Wall to protect the houses in front of the Church in Vallavillaithurai Village in Vilavancode Taluk	0.455
		Total	0.945

7.2. Repair, Renovation and Restoration (RRR) of water bodies directly linked to agriculture under Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)

This scheme involves rehabilitation of the Water bodies such as:

- Standardisation of tank bund to standards
- Desilting the tank bed to restore the storage capacity
- Reconstruction / Improvements to sluices and surplus arrangements
- Desilting and strengthening of feeder channel to ensure supply to tanks

The sharing pattern between Central and State Government is as under:

Category	2015-2016 Guidelines		2016-2017 Guidelines	
	Central share	State share	Central share	State share
Drought prone areas	90%	10%	60%	40%
Non-drought prone areas	25%	75%	25%	75%

Works in 104 tanks sanctioned at an estimated cost of Rs.54.68 crore in Ramanathapuram, Vellore and Sivagangai Districts under Phase I and II of the scheme were completed.

49 tanks have been sanctioned at an estimated cost of Rs.23.44 crore in Dharmapuri, Tiruvannamalai, Vellore and Virudhunagar Districts under Phase III of the scheme. Out of these, 46 works are in various stages of progress, 2 works are to be taken up and 1 work in Dharmapuri District is stopped due to objection raised by forest department.

Works in progress

Sl. No.	District	No. of tanks	Amount (Rs. in crore)	Ayacut (in acres)
1.	Dharmapuri	6	2.36	813.16
2.	Thiruvannamalai	8	2.49	1207.26

Sl. No.	District	No. of tanks	Amount (Rs. in crore)	Ayacut (in acres)
3.	Vellore	12	5.29	2150.96
4.	Virudhunagar	20	11.83	4308.52
	Total	46	21.97	8479.90

Works to be commenced

Sl. No.	District	No. of tanks	Amount (Rs. in crore)	Ayacut (in acres)
1.	Virudhunagar	2	1.06	738.68

- The details of Government of India share and grant received are as under:

Phase	Government of India share	Grant received
Phase I	18.96	5.13
Phase II	19.66	4.10
Phase III	14.06	---
Total	52.68	9.23

Works to be taken up

Works in 89 tanks in Coimbatore, Dharmapuri, Krishnagiri, Ramanathapuram, Sivagangai, Tiruppur and Virudhunagar Districts are to be taken up at an estimated cost of Rs.49.31 crore under Phase-IV to benefit an ayacut of 5927.70 acres.

Works in 10 tanks in Dindigul and Vellore Districts are to be taken up at an estimated cost of Rs.35.86 crore under Phase-V to benefit an ayacut of 1678.91 acres.

8.0. Inter-linking of Rivers within the State

Cauvery - Agniyar - South Vellar - Manimuthar - Vaigai - Gundar link canal scheme.

It is one of the links envisaged in the Feasibility Report prepared by the National Water Development Agency (NWDA) of Government of India for Inter-linking of peninsular rivers.

In the 1st phase of the scheme, the Construction of Kattalai Barrage across River Cauvery near Mayanur has been completed. In the 2nd phase, a proposed new canal taking off from the upstream of this barrage will connect the rivers of Agniyar, South Vellar, Manimuthar, Vaigai and Gundar to divert the flood water of River Cauvery.

This scheme is now being considered as an irrigation project and is proposed to be

implemented in Phases and for the Phase-I, a concept paper is under preparation for "Excavation of link canal from Cauvery (Kattalai Barrage) to South Vellar".

For implementation of this phase from Kattalai barrage to South Vellar, an extent of 3,619.63 acres of patta land and 405.57 acres of poramboke land have to be acquired.

By implementing this scheme, an extent of 42,153.49 acres of land will be benefited through 19 anicuts and 270 tanks in Pudukkottai District. After finalisation of the above proposal, Detailed Project Report for the work of "Excavation of link canal from South Vellar to Gundar River" will be prepared.

Pennaiyar (Sathanur dam) – Cheyyar link

This scheme aims to divert 5.87 TMC of water from Pennaiyar River for 20 days at the rate of 3400 Cusecs.

In this scheme a new canal to a length of 23.55 km will take off from Sathanur dam at FRL and will connect with the Cheyyar river at upstream of Alathur anicut.

Further a branch canal of length 28.72 km taking off from the above main canal will link the Thurinjalar River and thereby benefit the ayacuts of Nandan channel.

By this scheme a portion of flood water of Pennaiyar River when diverted will benefit an ayacut of 46,069 acres in the Taluks of Thiruvannamalai, Thandarampattu, Chengam, Polur and Vandavasi in Thiruvannamalai District and in the Gingee Taluk in Villupuram District.

Further, the diverted flood waters will also recharge the ground water table in Palar river bed. For implementation of this scheme, an extent of 602.48 acre of patta land, 68.15 acre of forest land and 44.81 acre of poramboke land have to be acquired.

Investigation process for preparation of Detailed Project Report based on New Land Acquisition Act is under progress. The estimate for Surveying & levelling for preparation of DPR is under consideration.

Pennaiyar (Nedungal anicut) – Palar link

This scheme aims to divert 3.5 TMC of flood waters of Pennaiyar river to Palar river during the months of October to December.

The Detailed Project report for this scheme is under scrutiny of National Water Development Agency (NWDA).

The Pennaiyar (Nedungal) - Palar link canal takes off from the existing Nedungal anicut and runs for a length of 54.150 km and outfalls into Kallar river which is a tributary of Palar river near Natarampalli Village of Vaniyampadi Taluk of Vellore District.

By implementing this scheme, 23,465 acres of existing command area will be stabilized through open wells and bore wells in Vaniyampadi Taluk of Vellore District.

For implementation of this scheme, an extent of 1,736.41 acres of patta land and 91.39 acres of poramboke land have to be acquired and the land acquisition cost works out to Rs.227.52 crore. The total estimate cost works out to Rs.374.48 crore excluding land acquisition cost.

The State Level Environmental Impact Assessment Authority has given clearance for the Terms of Reference (ToR) of this project for preparing Environmental Impact Assessment Report.

For preparation of Environmental Impact Assessment Report by engaging a consultant, administrative sanction accorded for an amount of Rs.0.6682 crore and the work is in progress.

Cauvery (Mettur dam) – Sarabanga - Thirumanimuthar - Ayyar link

This scheme envisages the diversion of a portion of surplus water of Cauvery River to the Districts of Salem, Namakkal, Perambalur and Tiruchirappalli by excavation of a new canal.

The proposed 169.400 km length of canal will take off from the foreshore area of Mettur dam at FRL level and will link Sarabanga, Thirumanimuthar and Ayyar rivers - all tributaries of River Cauvery.

A preliminary Detailed Project Report has been prepared for an estimated amount of Rs.6,800.00 crore as per the 2015-2016 schedule of rates for the work of "Excavation of link canal for a length of 132.305 km from Mettur dam to Pavithram tank".

The above preliminary project report is being prepared as five slices for Administrative convenience.

For implementation of Phase-I of this scheme, an extent of 2,342 acres of patta land and 195 acres of forest land have to be acquired.

The investigation work for the Phase II work of "Excavation of link canal from Pavithram tank to Ayyar River" is completed and preparation of detailed design and drawings is in progress.

9.0. Other Schemes under Investigation / Formulation

9.1. Formation of New Reservoirs

9.1.1. Formation of Reservoir across Koraiyar River in V.K. Puram Village of Ambasamudram Taluk in Tirunelveli District

Koraiyar River is a tributary of Tamirabarani River. It originates as Vadakku Koraiyar and Thercku Koraiyar and joins as Koraiyar River.

This scheme aims to form a reservoir across Koraiyar River in V.K. Puram Village of Ambasamudram Taluk in Tirunelveli District.

The proposed capacity of this reservoir is 1,017.23 Mcft. Annual storage of the reservoir in 1.22 fillings is calculated as 1,241.02 Mcft.

By implementing this scheme, an extent of 9,091.59 acres of land will be benefited. For implementing this scheme, an extent of 254.44 acres of

reserve forest land, 59.85 acres of patta land, 79.37 acres of poramboke land have to be acquired.

Administrative Sanction has been accorded at an estimated cost of Rs.0.242 crore for Surveying and Levelling for the work of preparation of DPR. The investigation works are in progress.

9.1.2. Excavation of New Supply Channel from Right and Left sides of the Ennekol Anicut

This scheme is proposed to divert flood surplus water of Thenpennaiyar River to the drought prone areas of Krishnagiri and Dharmapuri Districts by excavating a new supply channel from Right and Left sides of Ennekol Anicut in Krishnagiri Taluk and District.

By implementing this scheme, 3,408 acres of land will get benefited by 33 tanks and 16 check dams

For implementation of this scheme, 419.81 acres of patta land, 95.58 acres of poramboke land and 26.12 acres of forest land have to be acquired.

Administrative Sanction for carrying out detailed investigation and levelling works has been accorded for an amount of Rs.0.33 crore. The Detailed Project Report has been prepared and is under scrutiny.

9.1.3. Excavation of a New Channel from Left side channel of Vaniyar Reservoir

This scheme aims to form a new channel from the Left side Channel of Vaniyar Reservoir Project to benefit 16 tanks and 10 check dams in Pappireddipatti and Harur Taluks of Dharmapuri District.

By implementing this scheme, 242 acres of land will get benefited. For implementation of this scheme, 61 acres of Patta land and 27 acres of forest land have to be acquired.

Administrative Sanction for carrying out detailed investigation and levelling works has been accorded for an amount of Rs.0.07 crore. The Detailed Project Report has been prepared and is under scrutiny.

9.1.4. Diversion of surplus water of Chinnar River from Jerthalav Canal

This scheme aims to divert surplus water of Chinnar River from the Jerthalav canal by forming a new supply canal at LS 5.00 km to feed 14 tanks including Erranahalli and Pulikarai tanks in Palacode Taluk of Dharmapuri District.

By implementing this scheme, an extent of about 478.43 acres under 14 tanks will get benefited.

For implementation of this scheme, an extent of 68.10 acres of Patta land and 13.40 acres of Poramboke land have to be acquired.

Administrative Sanction for carrying out detailed investigation and levelling works has been accorded for an amount of Rs.0.10 crore. The Detailed Project Report has been prepared and is under scrutiny.

9.2. Tamil Nadu Water Resources Development Cell

Tamil Nadu Water Resources Development Cell has been constituted under the Chairmanship of a retired Chief Engineer of Water Resources Department to identify new water resources, to protect and for augmentation of available water resources, formulate schemes / Projects and identifying the funding source for achieving these objectives, liaison with the Government of India and other funding agencies for getting necessary funding assistance.

10.0. Activities of the Functional Wings.

There are 7 Functional Wings in the Department taking up Specialised activities involved in the implementation of the schemes, Harnessing and Collection of Data pertaining to the Ground Water, managing the State Water Resources and for imparting Trainings of varied nature to the officials and staff of this Department and other allied Departments. Each of these Wings is headed by a Chief Engineer. In addition, the Directorate of Boilers, headed by a Superintending Engineer cadre officer, is also functioning under this Department.

The functions of each of these Wings are detailed below:

10.1. Plan Formulation

This wing formulates Major, Medium & Minor Irrigation and River Inter-linking Schemes by undertaking detailed investigations. Soil Mechanics and

Research Division of this wing is carrying out studies regarding nature of the soil, quality of construction materials and water and acts as the Central Quality Control Testing Laboratory. Further, the Environmental Cells of this wing undertake testing the quality of water samples collected from important rivers and tanks. In addition, all the Structural Designs for various components of the schemes are evolved by this wing.

10.2. Design, Research and Construction Support

This wing is the Nodal Agency for the following schemes:

- Kudimaramath scheme.
- Repair, Renovation and Restoration (RRR) of water bodies.
- Desilting of Dams in the State.

- Implementing the Integrated Coastal Zone Management Project by formulating Coastal Protection Schemes.
- The Institute of Hydraulics and Hydrology under this wing is carrying out research in the fields of Hydraulics, Hydrology and Coastal Engineering. In addition, monitoring of coastline observations and performance evaluation of coastal protection structures are also taken up by this Institute.

Further, this Institute carries out Sedimentation and Watershed Management Studies in selected Reservoirs / Tanks to suggest remedial watershed management measures to be taken up in order to arrest the entry of sediments into reservoirs from the watershed.

10.3. Operation and Maintenance

This wing collects Water level data of 20 Major Reservoirs in the State, 4 Reservoirs

of Karnataka in the Cauvery Basin and Daily flow data at Billigundulu Gauge and Discharge Station of Central Water Commission (CWC), compiles the data and furnishes report to the offices of the Hon'ble Chief Minister and higher officials.

Round the clock monitoring of the water level of all the Reservoirs in the State are taken up during the North East Monsoon period.

In addition, Periodical monsoon inspection of the Dams is carried out and reports are compiled by this wing. The consolidated Health Status Report for all the Dams (Annual Consolidated Report) based on the pre-monsoon and post-monsoon inspections are prepared and sent to the Central Water Commission.

The Public Works Workshop and Stores of this wing, is engaged in fabrication and erection of dam shutters and hoisting arrangements and attending to emergent repair works.

The State Project Management Unit (SPMU) under this Wing is the Nodal Agency for the Dam Rehabilitation and Improvement Project (DRIP) being implemented with World Bank Assistance.

10.4. State Ground and Surface Water Resources Data Centre

This wing carries out various periodic multidisciplinary investigation studies on ground water by maintaining and observing state-wide monitoring network of ground water, surface water and water quality. The suitability of ground water for various uses such as domestic, irrigation and industrial uses are studied by using the pre and post monsoon water quality in the State.

Rainfall data collected from Standard Rain Gauge (SRG), Automatic Rain Gauge (ARG) and Full Climatic Stations (FCS) are analysed and the relationship established between the runoff and seepage. Improving the Ground water storage through techniques such as artificial

recharge structures and rain water harvesting wherever possible are taken up by this wing.

Borewells are drilled, wherever necessary, in the State to know the sub-surface lithological characteristics and hydro-geological parameters and quality of ground water of different Aquifers. Ground water clearance for water based and non-water based Industries is being issued in safe and semi-critical Firkas of the State.

Ground water related issues are being published in the Ground water Bulletins quarterly for the benefit of the ground water users / user Departments. Hydrological, Hydro meteorological, Geological and Geophysical data collected in the field are disseminated to various Government Departments, Government Undertakings, Academicians and individuals. This wing is the implementing Agency for the National Hydrology Project in Tamil Nadu.

10.5. Institute for Water Studies

The Institute for water studies carry out the works of scientific planning at micro level, accessing and management of the water resources of all the river basins in Tamil Nadu.

Tamil Nadu has 34 main rivers which have been grouped into 17 major river basins. Already micro level studies have been completed for 16 river basins. To update the above reports with present data the micro level reappraisal study reports for Kodaiyar, Vaippar, Vaigai, Vellar, Palar, Tamirabarani, Pennaiyar and Paravanar River basins have been completed and sent to all concerned officials for reference.

For the year 2018-19, the micro level Reappraisal study for Pambar - Kottakaraiyar River basin is to be taken up.

A well-developed Remote Sensing Centre of this institute provides remote sensing and Geographic Information System (GIS) based support to the Department for

effective management of water resources of the State. Satellite Data (Imagery) are being interpreted and analysed using special software along with Geographic Information System for these tasks.

10.6. State Water Resources Management Agency (SWaRMA)

The SWaRMA has developed the web enabled "Tamil Nadu Water Resources Information System" (TNWRIS), to aid efficient integrated water resources management and regulation. This database is being made available to the Department and other line Departments / Agencies for their use.

"Baseline Information on Water Resources for Chennai Region", which is a ready reckoner (e-governance manual) on all aspects of Water Resources of Chennai Region has been prepared. Similar exercise for Coimbatore and Trichy Regions will be taken up. In addition,

Water Audit as a pilot study for Vidur Irrigation System in Varahanadhi Basin to evaluate the System Performance is proposed to be taken up.

10.7. Irrigation Management Training Institute (IMTI)

Irrigation Management Training Institute, Trichy is a premier State Training Institute functioning under the control of the Water Resources Department.

The prime object of this Institute is to impart training for increasing the Agricultural production with optimum utilization of water. This Institute gives need based Capacity building training to the Officers involved in irrigated agriculture and Farmers to create awareness about the new techniques and improvements in the field of Irrigation Water Management. Since inception from 1984, IMTI is providing training in various topics such as Participatory Irrigation Management, Flow Measurements and Volumetric Supply of Irrigation Water,

Water Saving Techniques, Ground Water Development, Computer training & Management, Application of GIS and Application of Geo-synthesis for Sustainable development of water resources.

Study tour program on Polavaram, Godavari-Krishna Link project was also organized. A procurement training under TNIAMP(IAMWARM II) is also conducted.

Further IMTI organized a special workshop on "tnsand" Mobile Application on 30.06.2017 at IMTI.

In view of creating awareness on water Management and conservation among the farmers, the IMTI organized one day training in 20 Districts all over Tamil Nadu.

In Cauvery Delta at Thiruvarur, this Institute is having an Action Research Programme unit which was commenced during 1985 and is functioning as a Research Unit of IMTI. Capacity Building Training to the Farmers and field staff of

WRD are conducted at the Action Research Programme Unit, Thiruvapur.

Last Financial Year, 60 Training Programmes were conducted and 768 officers, 1339 Farmers and 878 Students were benefited. This year it is proposed to conduct more than 100 nos. of Training Programmes by this Institute.

All the training requirements of the Department, line Departments and other stakeholders are provided by this Institute.

To ensure effective water management and maintenance of the Irrigation systems, necessary Capacity Building Trainings are provided to the Officials and Staff of Government Departments and Farmers.

10.8. Directorate of Boilers

This Directorate 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.

This Directorate plays a crucial role in the phenomenal development of Boilers and Boiler Ancillary Industries in the State.

In addition, this Directorate is in charge of implementing the provisions of the Boiler Attendants' Rules, 2011 and Boiler Operation Engineers' Rules, 2011 to ensure that the Boilers used in the user industries are operated by certified Boiler Attendants or Boiler Operation Engineers, as the case may be. Examinations are conducted for issue of First Class and Second Class Certificates of Competency for Boiler Attendants for operating the boiler having heating surface not exceeding 1000m² and the Certificate of Proficiency for Boiler Operation Engineers for operating any type and size of Boilers.

Further, tests are conducted for high pressure welders employed in Boiler manufacturing units and Boiler Ancillary Units, Boiler Erectors and Repairers

organizations and competency certificates are issued to the successful candidates.

This Directorate ensures that the Boiler and Boiler components, piping and its fittings are designed and manufactured as per the provisions of the Indian Boiler Regulations, 1950 by approving the design for various components and by carrying out inspection at various stages of manufacture from approving the basic raw materials to the final product.

11.0. Sand Quarry

To regulate the sale of sand in river basins, sand mining operations were entrusted to single Agency i.e. Public Works Department in G.O.(Ms) No.95, Industries (MMC-I) Department, dated 1.10.2003 by amending the Tamil Nadu Minor Minerals Concession Rules, 1959 and section 38-A was introduced. Accordingly, with effect from 02.10.2003, the sale of sand to public and users is carried out by Public Works Department. In G.O.(Ms) No.325,Public Works (I Spl.2) Dept., dated 21.12.2013 orders were issued fixing the sale price of sand at Rs.800/- per load of 2 units excluding taxes and loading charges.

In Tamil Nadu to facilitate meeting the requirement of sand for construction purposes to the users, a Website, www.tnsand.in and a mobile application "tn sand" have been launched.

At present, booking of sand and the payment for the sale of sand with effect

from 5.10.2017 is enabled through the above website.

Guidelines have been issued for regulation of storage, transportation and sale of imported sand from other countries and sand brought from other States / Union Territories for construction purposes.

Considering the increased demand for sand, necessary steps are taken to import 30.00 lakh Metric Tonne at the rate approximately 5.00 lakh Metric Tonne of natural river sand for construction purposes per month by floating National Competitive Bid.

Further, to supply sand for construction purposes to the public, action is being taken to open new Quarries in the State.

Edapadi K. Palaniswami
Chief Minister