

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL, PRINCIPAL  
BENCH, NEW DELHI**

O.A.No. 694 of 2023

In re: News item appearing in Hindustan Times dated 26.10.2023 titled as  
**“UN predicts groundwater level in india will reduce to “low” by 2025”**

**STATUS REPORT FILED BY THE GOVERNMENT OF TAMILNADU,**  
**THE 18<sup>TH</sup> RESPONDENT**

I, S. Prabakaran B.E, S/o Mr. S. Singaram , Hindu ,aged about 59 years, working as the Chief Engineer of in the office of State Ground and Surface Water Resources Data Centre, Water Resources Department , Tharamani, Chennai-600113 do hereby solemnly affirm and sincerely states as follows:

1. I am the Chief Engineer in the Water Resources Department, State Ground and Surface Water Resources Data Centre, Tharamani, Chennai and as such I am well acquainted with the facts of the case based on the records available in this office . I am authorised to file the present status report on behalf of the State Government of Tamil Nadu as such I am competent to file this status report.

2. It is humbly submitted that this Hon'ble Tribunal by suo moto order dated 04.11.2023 was pleased to register the above O.A.No. 694 of 2023 and pleased to implead the Government of Tamilnadu represented by Secretary, Water Resource Department as 18<sup>th</sup> Respondent and directed to file the response. This Respondent filing the response in the form of status report.

3. It is humbly submitted that the initiatives so far taken by Government of Tamil Nadu for sustainable management of groundwater in the Tamil Nadu State are submitted as under:

1. Tamil Nadu is one of the water demand States in India. The total geographical area of the State is 1,30,058 sq. Km. 80% of groundwater resources are utilized by Agricultural activities. Other stakeholders are depending on the existing 20% of groundwater resources in the State.

2. Tamil Nadu has 17 major basins & 34 Rivers. Cauvery and Tamiraparani are two perennial Rivers. Tamil Nadu has an excellent surface water storing structures comprising of 90 Reservoirs and 1,10,000 Tanks. The total storage capacity of reservoirs and tanks is about 440 TMC. But, 95 % of surface water potential is being harnessed.
3. Geologically 73% of the State is covered by the oldest hard rock formations of Charnockite, Granitic Gneiss, and Granites of the Archean Age, and the remaining 27% is covered by Sedimentary formations of Alluvium, Gondwana, and Tertiary formations. When compared to Sedimentary formation, recharge and storage capacity is less in the hard rock formations in Tamil Nadu.
4. In Tamilnadu, 50% of rainfall is received from the Northeast, 35% from the Southwest monsoon, and 15% during the transition period. Groundwater availability in an area is based on various factors such as Rainfall, Geological formation, Soil Type, Recharge capacity, Topography, etc. By adopting proper Groundwater recharge techniques, there is a possibility of raising water levels in both sedimentary and hard rock formations and may restore Ground water sources to a quantity of about 375 TMC.
5. Dynamic Groundwater Resources of the State are being estimated periodically in coordination with the Central Ground Water Board (CGWB) based on the methodology evolved by Groundwater Resources Estimation Committee – GEC-2015. The groundwater potential assessment was carried out for every five years once on block-wise from the year 1992 in the State. Then, the State had decided to carry out the above assessment on Micro level basis, i.e. Firka, a unit of taluk could be taken as a assessment unit from the year 2011 and assessment has been reduced to every two years once. The Government of India, Ministry of Jal Shathi has compiled all States assessment reports and published as “Dynamic Ground Water Resources of India” The outcome of the assessment results will be utilized for taking appropriate management measures for optimal

utilization and sustainable development of the ground water resources and to replenish/augment ground water resources.

6. While, comparing the Groundwater Resources Estimation for the years: 2020 and 2022 shown in the given table:

- i. There has been a positive trend in the number of assessment units in the Safe category, increasing from 409 in 2020 to 463 in 2022.
- ii. The number of units in the Over-Exploited category has decreased from 435 in 2020 to 360 in 2022.
- iii. The Critical and Semi-Critical categories have also shown slight improvements, with a decrease in the number of units in each category between 2020 and 2022.
- iv. The Saline category has remained constant at 34 units across all three years.

<b>Category/ Quantum</b>	<b>No. of AUs as on GWRA 2020</b>	<b>No. of AUs as on GWRA 2022</b>
Over-Exploited	435	360
Critical	63	78
Semi-Critical	225	231
Safe	409	463
Saline	34	34
Annual Extractable (BCM)	17.69	19.23
Total Extraction (BCM)	14.67	14.43
Net Annual Ground Water Availability for Future use(BCM)	5.65	6.56
<b>Total</b>	<b>1166</b>	<b>1166</b>

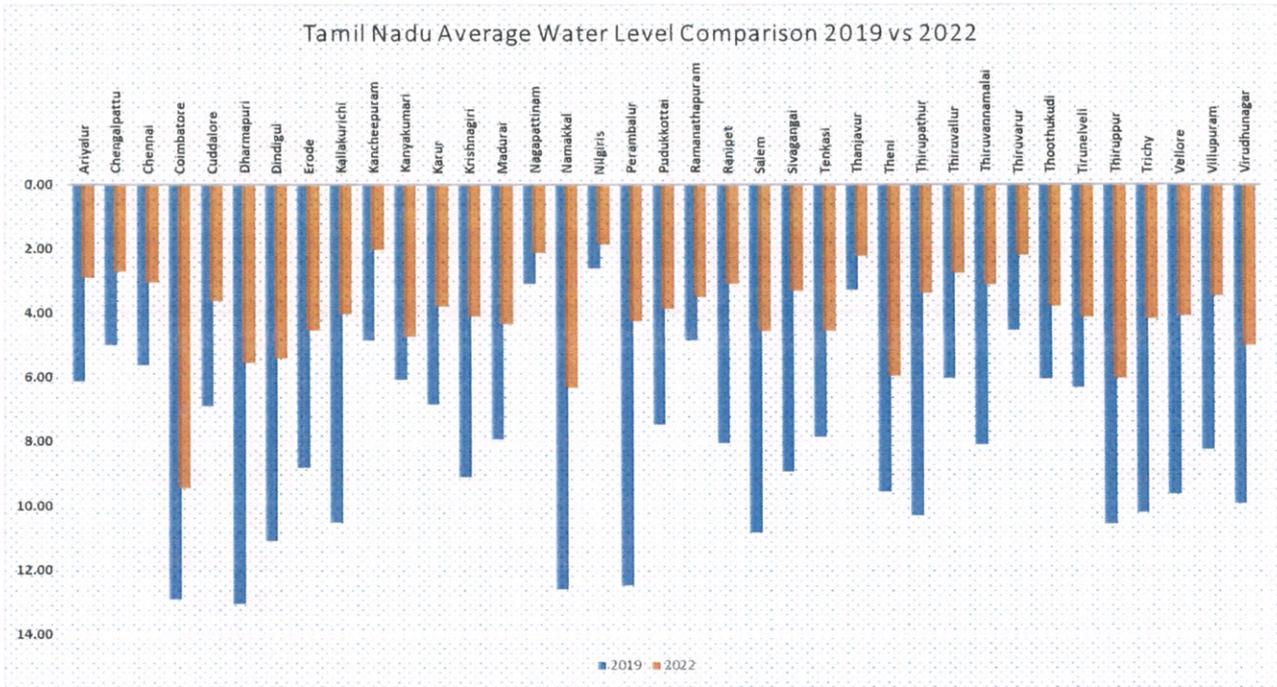
**7. Increased rainfall:**

Tamil Nadu has received above-average rainfall in recent years, which has helped to replenish groundwater supplies.

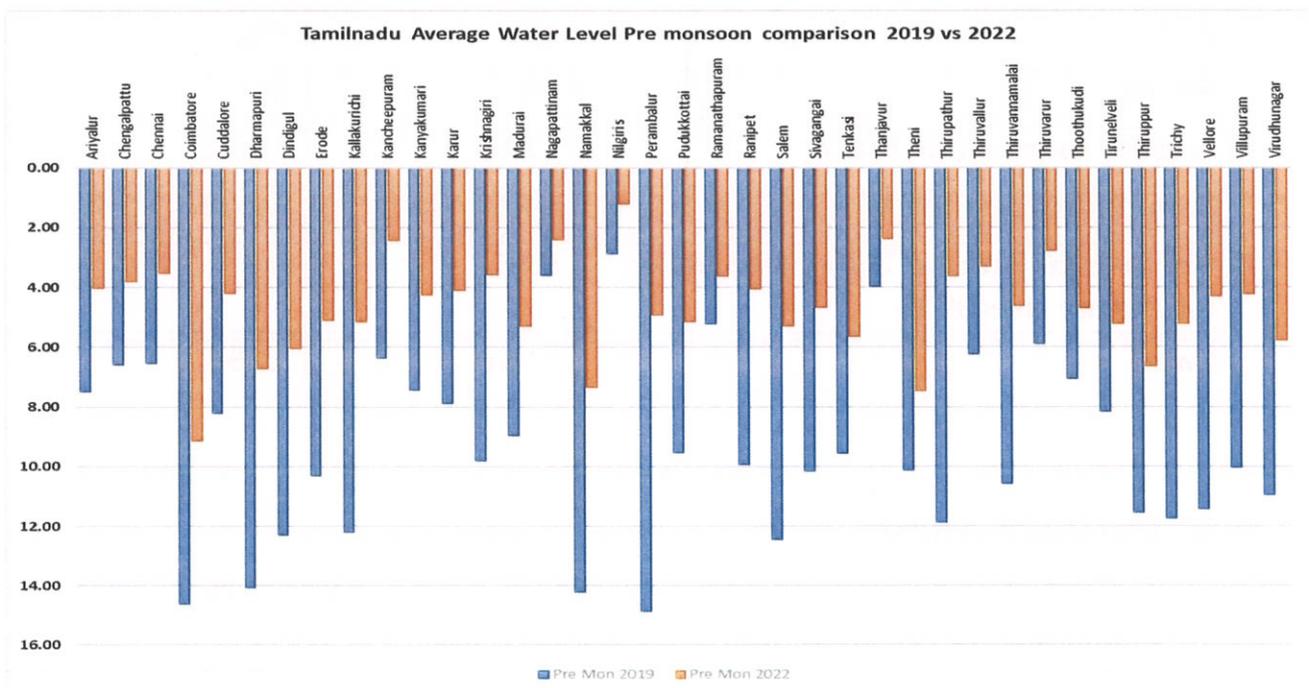
- 2022: Received excess rainfall (122% of the long-term average).

- 2021: Experienced deficient rainfall (72% of the long-term average).
  - 2020: Received near-normal rainfall (98% of the long-term average).
8. When compared to Water Level data from the year 2019 to 2022, no district shown any decline in water level. All districts are shown a rise in water level. The Average water level for the year 2019 is 7.96m and Average water level for the year 2022 is 3.95m and there is an increase in 4.01m.

**Tamil Nadu – District-wise Average Water Level Comparison for 2019 vs 2022**



**Comparison of Post Monsoon and Pre Monsoon 2019 vs 2022**



## Tamil Nadu – District-wise Average Water Level Comparison for 2019 vs 2022

### 9. **Controlled Extraction:**

The State of Tamil Nādu State, regulation and management of groundwater resources is governed through executive orders i.e. G.O.(Ms) No.142, Public Works (R2) Department, dated.23.07.2014 As per above order, Chief Engineer, SG&SWRDC, WRD is the competent authority for issuing No Objection Certificate on extracting Ground water in Semi Critical and Safe areas and have rights to issue guidelines then & there as per the above government order.

The memorandum of legislation of Water Resources (Regulation, Management & Augmentation) bill is under active consideration of the State Government. The Bill is holistically prepared to regulate, manage, augment the water resources in the State and also to motivate recycle, reuse, to develop proper future plan for waste water management.

### 10. **Improved Water Management:**

The Tamil Nadu state government has also implemented a number of water management initiatives which is given below.

In Tamil Nadu, in order to tackle the problem of declining ground water Level in Over- Exploited and Critical areas, SG&SWRDC (Groundwater, WRD) and other line departments has taken various steps such as constructing Artificial Recharge Structures like Check Dams, Recharge wells, Recharge shafts, ponds, Sub surface dykes under various schemes like MPARS, TNIAMP, Hydrology project etc., To improve the groundwater recharge, tanks are rejuvenated under RRR scheme, TNIAMP, etc. To create awareness on the importance of groundwater augmentation and conservation, several awareness programs are conducted under National Hydrology project.

#### (i) Tamil Nadu Irrigated Agriculture Modernisation Project (TNIAMP)

TNIAMP is the follow-on project of the successfully completed Tamil Nadu Irrigated Agriculture Modernisation and Water Bodies

Restoration and Management (TN IAMWARM) Project. This Project was planned for implementation in the remaining 66 sub basins of the State. It covers for an extent of 5.43 lakh hectare over a period of 7 years starting from 2018 with an outlay of Rs.2,962 crore. Revised outlay for the project is enhanced to 3249.12 Crore. Revised outlay for Water Resources Department is sanctioned as Rs.2562.48 Crore. Out of 2626 tanks, 2326 tanks completed and the balance works are in Progress. Out of 355 Anicuts, 279 Anicuts completed and the balance works are in Progress. Out of 95 Artificial Recharge Wells, 68 Artificial Recharge Wells completed and the balance works are in Progress.

Length of supply Channel (km): Out of 4187 Km Length of Supply Channel 3566 Km Length of Supply Channel completed and the balance works are in Progress. Out of 845 Km Length of River/Canal 729 Km Length of River/Canal completed and the balance works are in Progress.

(ii) Announcement Scheme (2019-2020)

Based on the Announcement made in the Budget session during the year 2019-2020, Government order has been received for the Construction of 885 Artificial Recharge Structures and 154 Monitoring Piezometers in Rivers and tanks of Thanjavur and Thiruvarur Districts for an amount of Rs. 60.197 Crores. The Construction of 758Nos of Artificial Recharge Structures and 154 nos. monitoring Piezometer have been completed for an amount of Rs. 40.377 Crore. The construction of 67 nos. of Artificial Recharge Structures is in progress and 60 nos. are to be taken up.

(iii) Announcement Scheme (2021 – 2024)

During the Public Works Department's demand in the Budget Session for every year, the Honourable Chief Minister of Tamil Nadu made an announcement for 826 no. of works in all Districts throughout the state, for an amount of Rs. 3,025.84 crores for the last 3 years (2021 to 2024). Out of which 483 works have been completed for an amount of Rs. 1,049.08 crores. 323 works for an amount of Rs. 1,903.77

crores are in progress. The remaining works are to be taken up. The details of recharge structures enclosed in Annexure – I.

(iv) Pradhan Mantri Krishi Sinchayee Yojana – PMKSY

PMKSY aims to ensure water security and optimal resource use by proposing the construction of 27 artificial recharge well structures in sub basins of Noyyal, Sarabanganadhi, Swetha, Lower Bhavani, and Varahanadhi for Rs. 12.08 Crores, approved by the State Level Sanctioning Committee. under “ Harkhetkopani” has been sent to the Chief Engineer, Plan Formulation.

(v) NadanthaaiVazhi Cauvery

The Detailed Project Report was prepared for the phase-I, from Mettur upto Trichy in 11 sub basins in 94 tanks (91 Artificial Recharge Wells in 91 tanks, 9 Artificial Recharge shafts in 3 tanks, 38 nos of Monitoring borewells and DWLR in 94 tanks) for Rs. 50.67 crores and sent to Chief Engineer, Trichy Region, WRD.

(vi) Jal Shakti Abhiyan: Catch The Rain 2021

The “Jal Shakti Abhiyan: Catch The Rain” (JSA:CTR) campaign with the theme “Catch the Rain, where it falls, when it falls” was launched by Hon’ble Prime Minister, Shri Narendra Modi on 22 March 2021, the World Water Day, in a function in New Delhi.

The JSA: CTR campaign implemented by National Water Mission (NWM), had the following 5 focused interventions-

- (a) Rainwater harvesting & water conservation.
- (b) Enumerating, geo-tagging & making inventory of all water bodies; preparation of scientific plans for water conservation.
- (c) Setting up Jal Shakti Kendras in all districts.
- (d) Intensive afforestation.
- (e) Awareness generation.

The status of 5 interventions from 22.03.2021 to 31.01.2024 is as follows.

Water Conservation & Rainwater Harvesting: No. of works completed – 3,50,916.

Renovation of Traditional water bodies / tanks: No. of works completed – 37,284.

Reuse and Recharge Structures: No. of works completed – 4,71,766.

Watershed Development: No. of works completed - 2,12,462.

Intensive Afforestation: 25,46,931.

Treated Waste Water Used (in KLD): 25,890.

Training Programmes/ Kisan Melas: No. of works completed – 23,435.

*(Note : \* Figure for completed works is only for activities under*

*MGNREGS).*

In RDPR Department, 3561 sites have been identified so far out of which work is commenced for 2740 Amrit Sarovars. Out of 2775 sarovar target, 2325 sarovar works have already been completed and 415 sarovars are ongoing.

In Water Resources Department, 92 number of tanks were identified by CWC under PMKSY – HKKP – RRR scheme Phase IV (83 Tanks) & Phase V (9 Tanks) and the works were completed.

Various Groundwater Awareness Programs regarding usage and conservation of water are conducted in schools and college Under National hydrology Project.

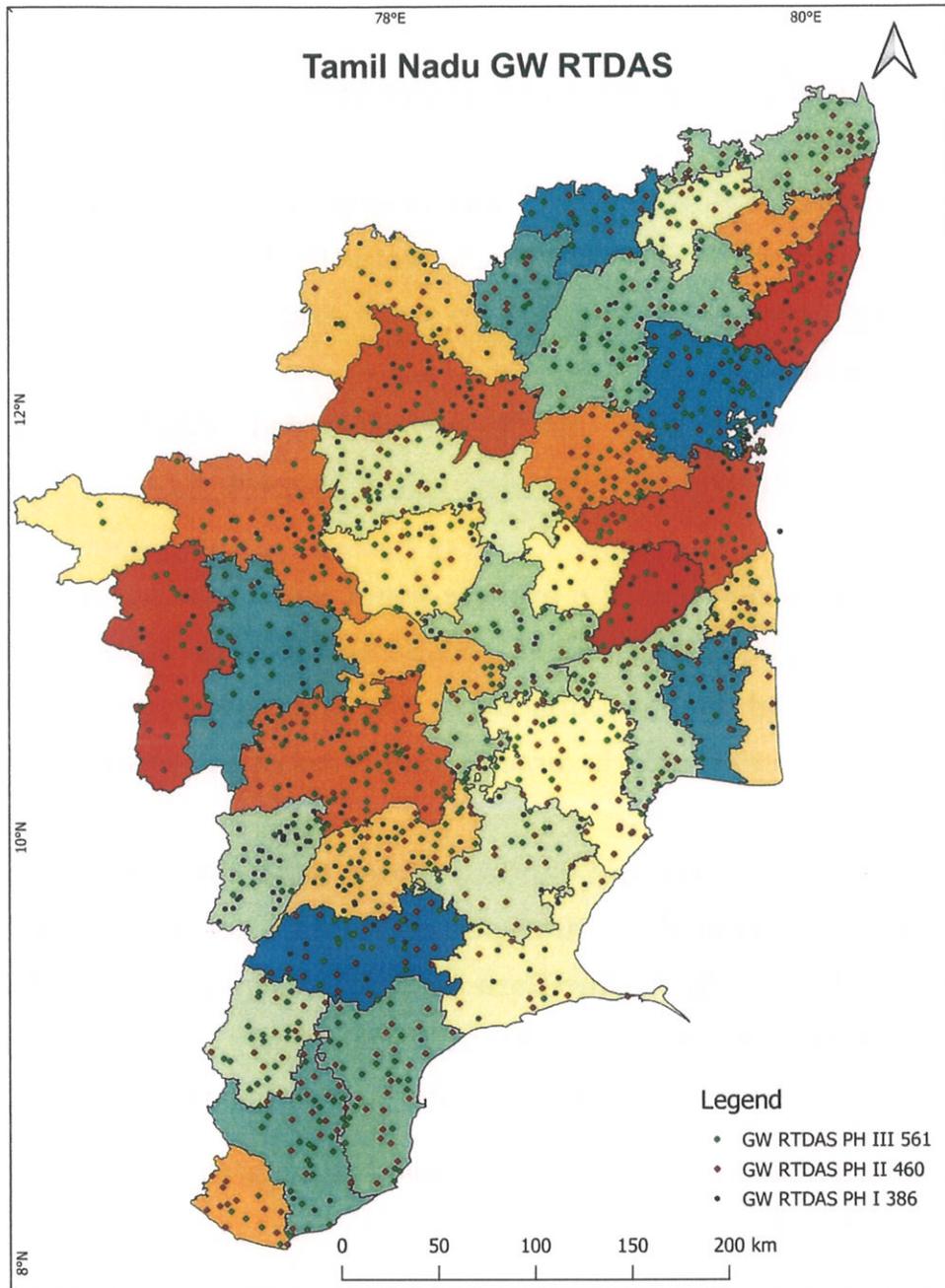
**(vii) Activities done to attain sustainable development of Ground Water Resources in Tamil Nadu:**

- Extensive Rain water harvesting.
- Micro planning for rain water harvesting.
- Artificial groundwater recharge.
- Rejuvenation, Restoration, Renovation of water bodies.
- Participatory Groundwater management.
- Intensive Micro irrigation system.
- Village-wise Aquifer Mapping.
- Migration of Firka category.
- Aquifer Mapping by CGWB.

**(viii) Ground Water Monitoring Network in Tamil Nadu :**

- In the State of Tamil Nadu, District wise Groundwater level monitoring is being carried out by observing water levels in the first week of every month from 3497 Dug / Open wells and 1565 Piezometers (Bore / Tube wells).
- Average water level (is being uploaded every month on the departmental website [www.groundwatertnpwd.org.in](http://www.groundwatertnpwd.org.in))
- The status report of the average water level is being viewed and used by various line départements, academicians, the public, etc.
- A web-based mobile application has been developed for water level observation and data is directly monitored at the head office.
- The State Ground and Surface Water Resources Data Centre (WRD) have implemented a three-phased project for the installation of a Ground Water Real-Time Data Acquisition System (GW RTDAS) across the state. This system, currently in Phase 1 with 386 operational units, aims to monitor groundwater levels throughout Tamil Nadu.
- Phase 1: 386 GW RTDAS units have been installed and are currently operational.
- Phase 2: A contract for the installation of 460 additional GW RTDAS units has been awarded, with 296 units already installed.
- Phase 3: Tender have been floated for the installation of 561 GW RTDAS units to complete the state wide network.

This phased approach ensures the comprehensive monitoring of groundwater resources in Tamil Nadu, providing valuable data for informed water management decisions



**(ix) Surface Water Monitoring Network in Tamil Nadu :**

In Tamil Nadu,

- Rainfall data is being monitored from 621 Standard Rain Gauge (SRG) stations and 58 Autographic Rain Gauge (ARG) stations.
- 45 Full Climatic Stations are maintained and monitored by this department.

**(x) Steps being taken to make Tamil Nadu a Groundwater Sustainable State:**

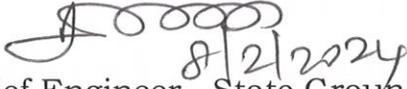
- a) Identification of recharge locations on Village-wise by using latest Geophysical technology (t-TEM Mapping).
- b) Developing a platform to regulate and manage the surface water and groundwater resources in terms of supply and demand aspects.
- c) Enacting and Implementing the State Water policy and Water Resources (Regulation, Management & Augmentation) Act and establishing Water Resources Authority in Tamil Nadu.
- d) Implementing Micro (Firka) Level water Conservation Plan at Village level, Panchayat Level, Taluk level and District level under “Jal Shakti Abhiyan: Catch the Rain”.
- e) Water Budgeting, recharge and water abstraction management through Implementation of Web Based Tamil Nadu Water Resources Information Management System (TNWRIMS).
- f) Mobilizing Extensive Stockholders' Participation in Rain Water Harvesting, Harnessing energy of Youth in protection & Rejuvenation of Water Bodies, Removal of encroachments and sources of pollution in Water bodies, Restoring extinct water bodies and buried water courses.
- g) Development and deployment of IT System Tamil Nadu Satellite based Waterbodies Information, Monitoring & Protection System (TN-SWIP) by leveraging high resolution remote sensing data with Artificial intelligence to provide near real-time monitoring with respect to water availability and its quality for effective implementation of Water Conservation Plan under JSA-CTC Campaign.
- h) Long term plan on to conserve excess surface water, waste management, Minor Irrigation system, Desalination of seawater.

In addition, implementing Atal Bhujal Yojana Scheme (Participatory Irrigation management) in Tamil Nadu will be helpful to improve the groundwater level in the more stressed areas by way of participating the farmers, monitoring the water level periodically by local people, Creating the awareness about groundwater – Surface water availability in their area, Drip irrigation techniques, Diversification of crops, etc.

In the above circumstances, it is concluded that due to constant measures for sustainable availability of groundwater taken by Government of Tamil Nadu by way of constructing various recharge structures such as Check Dams, Recharge wells, Recharge Shafts, percolation ponds, etc, through various implementing agencies by various schemes in the past ten years has shown a water level is in increasing trend in all districts of Tamil Nadu. In the year 2020, the annual groundwater extraction is more than 82.93% against the total groundwater resource. But, in the year 2023, the annual groundwater extraction comes down to 74.02% and the over-exploited units come down from 435 to 360 units and at the same time, safe units has increased from 409 to 463 units and total groundwater extraction comes down from 14.67BCM to 14.01BCM. The State Government has continuously taking initiatives for sustainable groundwater availability in the State through innovative schemes like finding the paleo channels to recharge excess surface water, re-use, recycle and waste water management, linking of river schemes like Tamirabarani – Karumeniyar - Nambiyar Rivier Linking Project through Accelerated Irrigation Benefit Programme, etc and in future, the State awaiting for implementing the Atal Bhujal Yojana Scheme, also to develop the water level status up to village-level.

It is therefore prayed that the Hon'ble Forum may be pleased to accept this status report and pass a suitable order in the facts and circumstances of the above case and thus render justice.

Dated at Chennai on this the 8<sup>th</sup> day of February, 2024

  
8/2/2024  
Chief Engineer, State Ground  
and Surface Water Resources Data Centre,  
Water Resources Department,  
Tamilnadu