ABSTRACT

Tamil Nadu Irrigated Agriculture Modernization Project (TN IAMP) - Water Resources Department – State Water Resources Management Agency (SWaRMA) - Updation and Maintenance of Tamil Nadu Water Resources Information System (TNWRIS), Development of Decision Implementation Support for River Basins, Flood Modelling, Water Auditing for Irrigation System and Institutional Strengthening and Capacity Building for Water Management (SWaRMA) under TNIAM Project – Estimated Amount of Rs.197.32 Lakhs– Administrative Sanction – Accorded- Orders –Issued.

Water Resources (WR 1) Department

G.O.(D) No.122

Dated 16.5.2022
சுபகிருது, வைகாசி 2
திருவள்ளுவர் ஆண்டு 2053

Read:-

1. G.O. (Ms) No. 140, Public Works (WR1) Department, dated 22.5.2018
2. From the Engineer-in-Chief and Chief Engineer (General), Water Resources Department, Chennai Letter No.TNIAMP Cell/F104/ Empowered Committee 2017, dated 22.12.2021.

ORDER:

In the Government Order first read above, block administrative sanction was accorded for a sum of Rs.2962 Crore for TN IAMP with a project period of 7 years from 2017 to 2024 (455.80 Million US Dollar including the fund assistance of 318 million US Dollar from the World Bank at the exchange rate of Rs.64.95 per US Dollar).

2. In the letter second read above, the Engineer-in-Chief and Chief Engineer (General), Water Resources Department, Chennai has stated that this project comprises of the following three main components.

A. Irrigation and Water Management.
B. Agriculture Productivity Enhancement.
C. Project Management Support.

The Component (A) consists of following four interrelated sub-components:-

A.1. Institutional Strengthening and Capacity Building for Water Management.
A.2. Irrigation Systems Modernisation.
A.3. Participatory Irrigation Management and
A.4. Convergence for Improved Service Delivery.

This sub-component will finance for

- Training for both within the Water Resources Department and allied agencies for strengthening the state's capacity of water resources planning and management.
- Technical assistance for studies of Information and Communication Technology (ICT) based modern technologies and river basin master plans.
- Experts, consultants, equipments and operating expenses
- Improving Institutional Infrastructure to support data collection and analysis etc.

3. He has also stated that under the component A1 Institutional Strengthening and Capacity Building for Water Management of TNIAMP, an amount of Rs.765 lakhs tentatively has been allotted for SWaRMA towards Purchase of Software, Hardware, Operating Cost (including staff salary and office expenditure), Hiring Consultancy services, Training, etc.

The Five Tasks to be carried out by SWaRMA under Component A1 are as follows:-

Task 1: Updation and Maintainence of TNWRIS

- TNWRIS is Geographic Information System (GIS) based Web Enabled database developed by State Water Resources Management Agency for data and information management on Water Resources in Tamil Nadu.

- It will serve as a data and knowledge repository for the river basins, enabling Water Resources Department Engineers to access, share and use available basin data for the development and management of water resources.

- More ever it is also useful for the public to access the information on water resources availability in the State of Tamil Nadu.

- The software was developed with the contribution made by the In house Expert i.e. Water Resources Engineers in association with IT Specialist available at SWaRMA during the Implementation period of IAMWARM Project.

- The updation of above software for the recent year data of all the River Basins is completed and readily available for Launch and the use of WRD Engineers

Task 2 : Developing of Decision Implementation Support (DIS) for Basins and Assessment of Surface water potential for River Basins

The Web based development of DIS allows for better application flexibility, improving the user support to database access and enlarging the number of users, particularly in those regions with considerable number of small and marginal farmers where the water scarcity demand a better use of irrigation water. To increase operational efficiencies, variable irrigation supplies need to be matched in real time with the

variable irrigation requirements over space. Spatial data management tools like GIS can effectively include spatial variability of soil, crop, water supply, climate and environment in dealing with the complex problems of water resources management through GIS based Decision Support System.

Advantages of DIS in Irrigation

The main advantages of using DIS for irrigation management are as follows:

i. Improves irrigation operational efficiency
ii. Speed up the process of decision making and control.
iii. Encourages exploration and discovery on the part of the decision maker
iv. Speeds up problem solving in an irrigation system.
v. Facilitates engineers and users for improving interpersonal Communication
vi. Promotes learning or training
vii. Generates new evidence in support of a decision
viii. Creates a competitive advantage over competition
ix. Reveals new approaches to thinking about the problem space
x. Helps automate managerial processes

Objectives

i. To scrutinize the available data with the Government Departments and develop a common standardized database management system suitable for Remote Sensing and GIS environment.
ii. To create Information support system for the water balance.
iii. To evaluate the surface water and groundwater resources by using GIS thematic maps and abstract models.
iv. To develop application models as decision making tools using relevant software like WEAP/MODSIM-DSS/HEC-HMS

Task 3 : Flood Modelling

Objectives:

i. To estimate Probable Maximum Precipitation (PMP) for the river basin.
ii. To establish hydrological modelling to estimate Probable Maximum Flood (PMF) using HEC-HMS
iii. To perform the flood modelling using HEC - RAS.
iv. To prepare the flood inundation map for a river basin using GIS

Task 4 : Water Auditing for Irrigation System

Objectives of Water Audit

i. To enhance Water Use Efficiency
ii. To check whether the use is within limits.
iii. To check the losses in the system.
iv. To ensure assessment of total irrigated area.
v. To check whether the prescribed procedure in irrigation management is followed or not.

Water Audit is a process of checking the quantum of water used for specific purpose along with reasoning for variation which will facilitate for optimizing water use efficiency. It is the first step towards addressing water related issues and make possible to utilize the available water resources more effective and in efficient manner. It offers knowledge about the present performance of the system in support of decision making. It will also highlight the key parameters which needs immediate intervention.

Benefits of Water Audit

i. Reduced water losses
ii. Improved financial performance
iii. Improved reliability of supply system
iv. Enhanced knowledge of distribution system
v. Efficient use of existing supplies
vi. Better safeguard to public health and property
vii. Improved public relations

Task 5 : Institutional Strengthening & Capacity Building for Water Management

i. Organizing Need Based Training with IWRM, NWM, NWA, WALAMTARI, WALMI, IIT, CWR, IRS, etc.
ii. Upscaling of knowledge through Interaction with Water Resources Experts in participating Seminars, Workshop, Conferences at State and National level.
iii. Hospitality for Discussion, Interaction, Technical and Sharing.
iv. Strengthening of SWaRMA Building.

4. He has also stated that an estimate for an amount of Rs.197.32 lakhs has been prepared for Updation and Maintenance of TNWRIS, Development of Decision Implementation Support for River Basins, Flood Modeling, Water Auditing for Irrigation System and Institutional Strengthening & Capacity Building for Water Management by State Water Resource Management Agency (SWaRMA) for the year 2021-2022 under Component A1 of TNIAM Project. The General Abstract of the estimate is as follows:-

Sl. No.	Description	Amount in Rs.
1	Updation and Maintenance of TNWRIS	**26,84,192**
2	Developing of Basin Information System with DIS and Assessment of Surface water potential for River Basins	**93,00,384**
3	Flood Modeling for selective River	**56,67,792**
4	Water Auditing For Irrigation System	**8,30,000**
5	Capacity Building for Water Resources Engineer	**12,50,000**
	Total	**1,97,32,368 (or) 197.32 lakhs**

The Empowered Committee approved the proposal on 17.12.2021

5. The Engineer-in-Chief and Chief Engineer (General), Water Resources Department, Chennai has therefore requested the Government to accord administrative sanction for Updation and Maintenance of TNWRIS, Development of Decision Implementation Support for River Basins, Flood Modelling, Water Auditing for Irrigation System and Institutional Strengthening & Capacity Building for Water Management by State Water Resource Management Agency (SWaRMA) at an estimated amount of Rs.197.32 Lakhs under Component A1 of TNIAM Project.

6. Based on the approval of the Empowered Committee, the Government have decided to accept the proposal of the Engineer-in-Chief and Chief Engineer (General), Water Resources Department, Chennai and hereby accord administrative sanction for Updation and Maintenance of TNWRIS, Development of Decision Implementation Support for River Basins, Flood Modelling, Water Auditing for Irrigation System and Institutional Strengthening & Capacity Building for Water Management by State Water Resource Management Agency (SWaRMA) at an estimated amount of Rs.1,97,32,000/-(Rupees One crore ninety seven lakhs and thirty two thousand only) under Component A1 of TNIAM Project.

7. The expenditure sanctioned at para 6 above shall be debited to the following head of account :-

2701-Medium Irrigation -80- General -004- Research- Externally Aided Project PC- Formation of SWaRMA under TNIAM Project-II-.

Detailed and Sub Detailed Heads	**Sanctioned Amount in Rs.**
376 Computer and Accessories- 01- Purchase. **DPC:2701 80 004 PC 376 01**	1,31,80,000
333 Payments for Professional and Special Services – 04 Contract Payment. **DPC: 2701 80 004 PC 333 04**	20,35,000
372 Training – 01 Training . **DPC: 2701 80 004 PC 372 01**	38,17,000
313- Hospitality / Entertainment Expenditure – 01 Hospitality / Entertainment Expenditure. **DPC: 2701 80 004 PC 313 01**	2,00,000
317 Minor Works- 01 Minor Works. **DPC:2701 80 004 PC 317 01**	5,00,000
Total	**1,97,32,000**

8. Necessary Additional Funds of Rs.1,84,94,000/- will be provided in RE/FMA 2022-23. However, this expenditure shall be brought to the notice of legislature by way of **Specific Inclusion** in the Supplementary Estimate 2022-23. Pending Provision of funds, the Engineer-in-Chief and Chief Engineer (General), Water Resources Department, Chennai is authorized to incur the expenditure sanctioned in para 6 above. The Engineer-

in-Chief and Chief Engineer (General), Water Resources Department, Chennai is directed to include the above item of expenditure while sending the budget proposal for Revised Estimate /Final Modified Appropriation 2022-23 and also send necessary draft Explanatory note for **inclusion** of the expenditure in the Supplementary Estimate 2022-23 to Finance (PW-II/BG-I) Department at an appropriate time without fail.

9. This order issues with the concurrence of Finance Department vide its U.O. No.705/PW-II/2022, dated:11.5.2022 and Additional Sanction Ledger No.0143 (One hundred and forty three)

(BY ORDER OF THE GOVERNOR)

SANDEEP SAXENA
ADDITIONAL CHIEF SECRETARY TO GOVERNMENT

To
The Principal Secretary and Project Director, TN IAM Project,
MDPU Office, Chennai-5.
The Engineer in Chief and Chief Engineer (General),
Water Resources Department, Chennai – 5.
The Chief Engineer and Director, SWaRMA, Water Resources Department,
Taramani, Chennai-113.
The Principal Accountant General (Audit / A&E),
Teynampet, Chennai-18.
The Pay and Accounts Officer (East),Egmore, Chennai-8.
The Pay and Accounts Officer (South),Chennai-35.
The Pay and Accounts Officer (North), Chennai-1.
Copy to:-
The Finance (PW.II/BG I/BG II/W&M I) Department, Chennai – 9.
The Resident Audit Officer,
Office of the Principal Accountant General
(General and Social Sector Audit),
Secretariat, Chennai – 9.
Stock File /Spare Copy.

//FORWARDED BY ORDER//

16/5/2022
SECTION OFFICER