

## **Sub-Theme: Sustainable Water Resource Management**

### **Topic Session: Aquifer Mapping and Management.**

#### Background:

In India, groundwater continues to be the principal source for drinking water, irrigation, industry, and urban growth. Rising dependence, coupled with over-extraction, water quality degradation, and climate variability, requires need to shift from fragmented, administrative-unit based management towards a scientific, aquifer-based governance framework. In this context, the National Aquifer Mapping and Management Programme (NAQUIM) serves as the national framework for evidence-based groundwater management, anchoring core functions such as data generation, monitoring, assessment, regulation, artificial recharge, capacity building, and advisory support. Further, it enables coordinated planning, strengthened regulation, and convergence with national programmes on water resources.

#### Objective:

- Strengthen aquifer science and methodologies, and their application for planning, governance, regulation and management of groundwater.
- Promote digital innovation and data integration for improved groundwater governance.
- Enhance convergence and institutional coordination.
- Strengthen climate-resilient and sustainable practices by examining aquifer-based approaches.
- Promote participatory groundwater governance by sharing best practices.
- Develop a forward-looking roadmap by identifying priority research areas, policy reforms, and implementation strategies to strengthen the next phase of NAQUIM.

#### Expected Outcome:

- Curated case studies and replicable models demonstrating effective partnerships and cross-sectoral approaches for wider adoption.
- Practical, actionable recommendations to strengthen NAQUIM, aquifer-based planning, and groundwater regulation frameworks.
- A clear roadmap outlining future priorities across science, technology, institutional strengthening, and implementation strategies.
- Actionable insights on institutional reforms, capacity building needs, and strengthened monitoring and evaluation frameworks.
- Identification of priority themes, pilot initiatives, and innovative practices for scaling up water security and climate resilience interventions.