



Title: Watershed Management for Agricultural Resilience: Challenges, Solutions, and Sustainable Development

Date: 5th March 2025, Wednesday

Time: 11.30-13.00 hrs

Venue: Tamarind Hall, India Habitat Centre, Lodhi Road, New Delhi

Rural communities throughout India face various challenges related to climate change and its variability, coupled with declining farm productivity and livelihood due to depleting and degrading natural resources. Dryland agriculture in India is particularly vulnerable to climate change, given the dependence of its dense population on agriculture, excessive pressure on natural resources, and limited coping capacities. The anticipated impacts of climate change are likely to further strain already scarce land, water resources, and livelihoods. To address these issues, Integrated Watershed Management Programme (IWM), rooted in the principle of participatory approach of ecosystem-based management and has been widely adopted in India since 1987 for the conservation, sustainable use, and restoration of natural resources, such as land and water, to enhance livelihoods and the resilience of dryland agriculture.

Watershed is a fundamental hydrological unit that encompasses the land area draining water, whether from rainfall or snowmelt, to a common outlet such as a river, lake, or ocean. Healthy watersheds are crucial for both ecological/biodiversity integrity and human well-being, as they provide essential ecosystem services. Moreover, healthy watersheds are better equipped to withstand extreme weather events, thus enhancing resilience against the impacts of climate change is essential. However, in tropical and subtropical dryland regions of India, which experience intense seasonal variations in rainfall, Environment, land use practices and Socio-cultural factors, an effective watershed management is vital for local water conservation, supporting agriculture, livestock, and community livelihoods, and helping to build resilience and mitigate drought, desertification, and soil erosion.

Recognizing the importance of watershed development, the Government of India has implemented various programs since last 1983-84. Notably, the participatory approach of Integrated Watershed Management Programme (IWMP), launched in 1989, was later amalgamated into the Watershed Development Component of Pradhan Mantri Krishi Sinchayee Yojana (WDC-PMKSY) in 2015-16. By implementing various scheme of watersheds, India become one of the largest watershed management programs in the world. Meanwhile Karnataka Watershed Development Project-II, also locally known as SUJALA-3 from 2016-2019 supported by the World Bank, aims to demonstrate effective watershed management in through science-based participatory approaches, and strengthen institutions and capacities. Upon successful implementation of Sujala-3 in Karnataka, the World Bank assisted Rejuvenating Watersheds for Agricultural Resilience through Innovative Development (REWARD) program which is a PforR (Program for Results) project which is being implemented from 2021 to 2026 in the States of Karnataka and Odisha. The program aims to introduce modern watershed management through science input and applying comprehensive spatial data and technologies, decision support tools, knowledge exchanges and strengthening institutions in the States of Karnataka and Odisha. Meanwhile, the Government of India stepped up to 'WDC-PMKSY 2.0' for 2021-2026, targeting 49.50 lakh hectares with a central financial outlay of Rs. 8,134 crores to further refine and scale up the science-based watershed management approaches.

The Energy and Resources Institute (TERI) actively involved in watershed development projects across India since last two decade, primarily focusing on Implementation, process monitoring and Impact evaluation through research Policy and capacity building, often collaborating with government departments and local communities to achieve effective results. Meanwhile it is well understood that to address the identified challenges and ensure the success of watershed management programs, several key considerations are crucial. An integrated approach that combines biophysical, socioeconomic, and institutional factors is essential for ensuring holistic and sustainable development. Projects must be designed with equitable benefit sharing to ensure a fair distribution of benefits and costs among all stakeholders, particularly marginalized communities. Genuine community participation throughout the project lifecycle is critical, empowering local institutions to take ownership and manage resources sustainably in the long term. Adaptive management should be implemented through robust monitoring and evaluation frameworks that utilize modern tools and technologies to track progress, learn from experiences, and adjust strategies as needed. Additionally, investing in capacity building for all stakeholders and promoting knowledge sharing among government agencies, NGOs, research institutions, and local communities will enhance effectiveness. Strengthening the policy and legal framework, especially reviewing and updating water laws, is necessary to promote equitable access to and sustainable management of groundwater resources. Finally, leveraging modern technologies such as remote sensing, GIS, and data analytics can significantly improve planning, monitoring, and evaluation, contributing to more informed and effective watershed management. Keeping in this view TERI is organising this thematic track *“Watershed Management for Agricultural Resilience: Challenges, Solutions, and Sustainable Development”* with the following objectives

1. Align watershed management with national agricultural policies and both national and international climate adaptation objectives.
2. Foster multi-stakeholder engagement, including farmers, policymakers, researchers, and local communities

3. Promote interdisciplinary research and knowledge-sharing on climate-resilient farming techniques within watershed frameworks.
4. Emphasize nature-based solutions such as agroforestry, soil conservation, and regenerative agriculture
5. Explore technological advancements in watershed management, including agro-advisory services, remote sensing (RS) and GIS applications, smart irrigation systems, and land resource inventory (LRI)-based interventions.
6. Encourage farmer-led watershed management through participatory planning, local governance structures and their inclusive decision-making to ensure equitable resource access and sustainable development
7. Develop carbon finance mechanisms and policies to incentivize private-sector investment in sustainable agriculture and watershed management

About the World Sustainable Development Summit (WSDS)

The World Sustainable Development Summit (WSDS) is the annual flagship Track II initiative organized by The Energy and Resources Institute (TERI). Instituted in 2001, the Summit series has a legacy of over two decades for making 'sustainable development' a globally shared goal. The only independently convened international Summit on sustainable development and environment, based in the Global South, WSDS strives to provide long-term solutions for the benefit of global communities by assembling the world's most enlightened leaders and thinkers on a single platform. The 24th edition of the annual flagship event of The Energy and Resources Institute (TERI)—the World Sustainable Development Summit (WSDS)—will be held from 5-7 March 2025 in New Delhi. The Summit deliberations will focus on the umbrella theme: Partnerships for Accelerating Sustainable Development and Climate Solutions.

Agenda

Time	Agenda Item
11:30-11:40 hrs	Introduction and welcome of speakers
11:40 - 11:50 hrs	Presentation on context setting of the theme
11:50 - 12:45 hrs	<p>Panel Discussion</p> <p>Discussion to be around:</p> <ul style="list-style-type: none"> • Aligning watershed management with national agricultural policies and climate adaptation objectives. • Fostering multi-stakeholder engagement, including farmers, local communities, policymakers, researchers, etc. • Promoting interdisciplinary research and knowledge-sharing on climate-resilient farming techniques within watershed frameworks. • Emphasize nature-based solutions such as agroforestry, soil conservation, and regenerative agriculture • Exploring technological advancements in watershed management, including agro-advisory services, remote sensing (RS) and GIS applications, smart irrigation systems, and land resource inventory (LRI)-based interventions. • Encouraging farmer-led watershed management through participatory planning, local governance structures and their inclusive decision-making to ensure equitable resource access and sustainable development • Develop carbon finance mechanisms and policies to incentivize private-sector investment in sustainable agriculture and watershed management

Speakers

Mr Nitin Khade, Chair

*Joint Secretary, Department of Land Resources, Ministry of Rural Development,
Government of India*

Dr C. P. Reddy

*Senior Additional Commissioner (WM), Department of Land Resources, Ministry of
Rural Development, Gol*

Mr Mahesh B Shirur

Commissioner, Watershed Development Department, Government of Karnataka

Dr. Heera Lal

CEO, WDC-PMKSY-2, Irrigation Department, Government of Uttar Pradesh

Ms Preeti Kumar

Task Team Leader (TTL), World Bank, REWARD, (Karnataka and Orissa)

Mr Umakant, IFS (retd)

Mr Anshuman

Senior Fellow & Director, Water Resources, TERI

12:45 – 12:55 hrs

Question and Answer

12:55 - 13:00 hrs

Concluding remarks