



## INDIAN ASSOCIATION OF SOIL AND WATER CONSERVATIONISTS

### Proceedings of the Webinar held on 24<sup>th</sup> Sept., 2025

The Indian Association of Soil and Water Conservationists (IASWC) in collaboration with the International Water Management Institute (IWMI), New Delhi, organized a Webinar on "Flood Disaster Management and Contingency Measures for Crop Production" on 24<sup>th</sup> September, 2025. The aim of the Webinar was to deliberate on challenges and solutions related to flood disaster management, vulnerability mapping, climate adaptation, and contingency planning for sustainable crop production.

Dr. Ambrish Kumar, Principal Scientist (SWCE) & Vice-President, IASWC and Coordinator welcomed the dignitaries, speakers, hon'ble members and participants to the webinar. In his address, he highlighted the importance of collaborative initiatives between scientific institutions and international organisations like IWMI to tackle the recurring flood challenges in India. He emphasized the need for scientific knowledge dissemination and active stakeholder participation to ensure sustainable crop production in flood-prone areas.

Dr. M. Madhu, Director, ICAR-IISWC & President, IASWC also welcomed all the speakers and participants. He briefly highlighted the importance of flood disaster management and the need for effective strategies to reduce crop losses and support farmers in flood-prone areas.

#### **Speaker's addresses**

**Dr. Giriraj Amarnath, Research Group Leader - Water Data for Climate Resilience and Principal Researcher – Disaster Risk Management and Climate Resilience at the International Water Management Institute (IWMI) in Colombo, Sri Lanka**

Dr Giriraj Amarnath highlighted the *recent flood disasters in India* and their impact on agriculture and rural livelihoods. His talk emphasized the importance of scientific data, early warning systems, and regional cooperation to minimize flood risks. The key points of his talk are: -

1. Move from ad-hoc relief to a four-pillar approach—integrating disaster risk reduction (DRR) and climate change adaptation (CCA), engaging communities, applying adaptive management, and strengthening adaptive governance. This enables resilient cropping systems and reduces disaster losses.
2. Invest in hazard mapping, AI-driven flood forecasting for last mile delivery, ICT-based alerts in a co-design approach with local communities, and index-based flood insurance (IBFI) to protect farmers and reduce post-disaster costs. Combine public and private risk-financing to enhance smallholder resilience.

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3. Replicate proven post-flood cropping strategies (e.g., maize, lentils, vegetables after floods; over-aged rice seedlings and diversified crops in Odisha/Bihar) that improved yields by up to 24–29% and nearly doubled benefit-cost ratios.
4. Expand Underground Transfer of Floods for Irrigation (UTFI) pilots to store excess monsoon water aquifer system, improve groundwater security, and co-manage flood and drought cycles at scale.
5. Ensure local knowledge, stakeholder ownership, gender & youth inclusion, and district-level capacity for integrated flood management. Build long-term institutional commitment to strategic planning, risk communication, and sustainable infrastructure.

**Dr. Rakesh Kumar, Professor & Head, Department of Civil Engineering, Sharda University, Greater Noida and Former Scientist-G, NIH Roorkee**

He delivered a lecture on *mainstreaming climate adaptation into integrated flood management practices*. He explained how traditional flood management measures can be strengthened by adopting climate-smart solutions and sustainable planning approaches.

**Key Highlights: -**

1. To enhance Resilience of communities and infrastructure to future climate-induced floods.
2. To reduce Vulnerability by integrating adaptation measures into planning.
3. To promote Sustainable Development by balancing economic, social, and environmental needs.
4. To support Evidence-Based Decisions using climate projections and risk models.

**Dr. D.K. Singh, Principal Scientist, IARI, New Delhi**

He presented on *flood vulnerability mapping in the middle Gangatic plains*. He discussed GIS-based techniques and research findings that can help in planning effective mitigation strategies and reducing risks to farming communities.

**Dr. Gopal Kumar, Deputy Country Representative, IWMI, New Delhi**

Dr. Gopal Kumar, Deputy Country Representative, IWMI highlighted IWMI's contributions in the field of water management, flood forecasting, and farmer resilience programs. He explained IWMI's role in promoting sustainable solutions for water security, integrated flood management, and climate-resilient agriculture. He also shared examples of IWMI's collaborative projects that demonstrated effective partnerships between research organisations, policymakers, and farming communities.

**Dr. Mukesh Kumar, Professor, RPCAU, Samastipur, Bihar**

He highlighted the role of flash floods in the development of fertile alluvial soils in the Indo-Gangetic plain areas. He suggested farmers to spray 2% DAP and Urea spray and fungicide sprays on submerged paddy

crops to survive in the flooded water. He also emphasised the importance of trenches for the disposal of fertile silts into the soil profile. This is the opportunity given by the almighty nature to farmers for the revival of the old soil, which lacked organic carbon and was polluted with pesticides. Farmers can also use this silt for brick making, so pressure on fertile soils can be reduced.

#### **Follow-up Remarks:**

Dr. Rajive Kumar Singh, Chief Editor, IJSC in his follow-up remarks, appreciated the speakers for their insightful deliberations. He underlined the importance of documenting such discussions for policy formulation and emphasized strengthening scientific communication for better outreach and adoption at the grassroots level.

#### **Concluding Remarks**

Dr. Madhu, Director, ICAR-IISWC & President, IASWC summarized the key points shared by the speakers. He stressed the importance of joint efforts by scientists, institutions, and farmers to build resilience against floods and ensure sustainable crop production.

The meeting was summed up by the formal vote of thanks by Dr Raman Jeet Singh, Secretary, IASWC, Dehradun.



(Raman Jeet Singh)  
Secretary, IASWC

