

ICRISAT Showcases Scalable Regenerative Landscapes for Water Security

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A team of scientists from ICRISAT (Drs. Anantha KH, Venkata Radha A, and Nagarjuna N Reddy) participated in the 35th edition of World Water Week, where the global community convened under the theme “Water for Climate Action.” Supported by the CGIAR Multifunctional Landscapes (MFL) Science Program, the team utilized this global platform to foster engagement and cross-regional learning on sustainable ecosystem management. The

CGIAR MFL Science Program is a holistic research initiative that envisions vibrant, diverse, and resilient landscapes managed to simultaneously deliver sustainable eco-agrifood systems, healthy diets, and climate resilience, all while staying within planetary boundaries.

At a time when droughts, floods, and water conflicts are intensifying due to climate change, the team showcased ICRISAT's pioneering Regenerative Landscape Approach – a practical embodiment of the CGIAR MFL vision. This holistic model links water, soils, crops, biodiversity, and communities to create multifunctional ecosystems. It delivers simultaneous benefits in water security, food production, carbon storage, biodiversity, and rural livelihoods through interventions such as rainwater harvesting, climate-resilient crops, agroforestry, ecosystem restoration, and community-led water governance.

Drawing on successful experiences from Bundelkhand, India, where these interventions have improved crop yields, enhanced household nutrition, created women-led livelihood opportunities, and restored ecosystems, the team highlighted how these solutions are scaling to other regions in India and Africa. The approach drew significant interest from public and private sector partners, development agencies, and researchers, positioning the CGIAR and ICRISAT work as a scalable model for linking water security with livelihoods, food systems, and climate resilience.

Through active dialogues and networking, ICRISAT emphasized the importance of collaborative action in managing water as a shared resource for adaptation and mitigation. On the sidelines of the event, the team interacted with Prof. Johan Rockström, Director of the Potsdam Institute for Climate Impact Research and co-chair of the Global Commission on the Economics of Water (GCEW), sharing successful cases of regenerative landscapes for transforming agri-food systems in drylands. Discussions also explored potential collaboration between the Potsdam Institute and ICRISAT on the water-food-climate-energy nexus.

The team further explored collaboration opportunities with researchers from diverse organisations, including Wageningen University, Seoul Water, Wildlife Conservation Society, IVL Swedish Environmental Research Institute, SKYDROP, German Institute of Development and Sustainability, Cotton Connect, METROPOLIA, University of New South Wales, GRUNDFOS, FAIRR INITIATIVE, Confederation of Indian Industries, and EMIS.



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Visitor interacting with Scientist on the benefits of landscape resource conservation practices in drylands.



Regenerative Landscapes for Transforming Agrifood System in Dryland Ecosystem

- Landscape Characterization for resource quantification
- Water budget based natural resource management planning and cropping system design
- Diversification of cropping system including agroforestry for risk mitigation
- Enhancing soil organic carbon through crop rotation, green manuring and regenerative agricultural practices
- State-of-the-art instrumentation for bridging data gaps
- Capacity building for bridging the knowledge gap and scaling up






Further communication
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- Farmer income: 3X
- Addressing water scarcity: Water table up from 26 m to 4.5 m
- Enhanced base flow by 150%
- Reducing water-energy-carbon footprint: emission intensity down from 0.14 to 0.06
- Livelihoods (In-migration)
- Cropping intensity up from 110 to 180%
- Sustainable intensification of 125,000 ha degraded fallow land
- Temperature regulation towards 1.5 °C targets









Backdrop on regenerative landscapes for transforming Agri-food system in Dryland ecosystem.