

International Training on Landscape Resource Conservation for Achieving Land Degradation and Carbon Neutrality and Sustainability of Smallholder Farming Systems



Organized by
International Crops Research Institute for the Semi-Arid Tropics
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Background

Land degradation is one of the major global challenges which is a major cause for water scarcity, poor productivity and low cropping intensity. With increasing global population, technological advancement and changing food habits, there is a significant change in land use. A large part of the forest cover has been converted into grazing and agriculture lands in search of various provisioning services and facilitating urbanization. These changes have been accompanied by negative externalities such as climate change, loss of biodiversity, poor retention ability of the landscape and heavy land degradation. These alterations have influenced the number of planetary boundary conditions which are negatively influencing available natural resources, sustainability and productivity of the landscape at local, regional and global scale. These challenges are catastrophic, especially in uplands, those were historically covered with forest, however, converted into desolated landscapes over the period. In addition, these landscapes largely belong to marginal and small landholders which coincided with high poverty and malnutrition. In the absence of resource availability, inhabitants residing in these areas are compelled to migrate to urban centres in search of their livelihoods leaving behind their valuables and families.

This situation often results in precarious socio-economic conditions including large scale unemployment and delinquency in society.

The landscape resource conservation approach is a promising solution for regenerating desolated landscapes into productive areas which can address the interlinked challenges of food insecurity, malnutrition, poverty along with climate change. This approach supports building groundwater resilience, moisture retention ability, improving baseflow and cropping intensification with carbon neutrality. Once the moisture is made available, farmers develop their interest in agriculture and start adopting a range of climate resilient agricultural technologies to make agriculture a profitable venture. In addition, regenerative landscapes with increased resource availability hold huge opportunity for crop intensification and system productivity. Scaling such good practices will also generate employment opportunities locally catering the need of landless, marginal and vulnerable farming families. This not only enhances the household income but also controls out migration, reduces drudgery and improves the overall quality of living. Scaling regenerative landscapes with climate smart agriculture technologies is the way forward to addressing United Nations Sustainable Development Goals (UN-SDGs) including social equality, peace and harmony.

Who should attend?

Participants can be from the National Agricultural Research and Extension System, Government departments such as the department of agriculture, horticulture, forestry, rural development, and animal husbandry, NGOs engaged in agriculture, people from industries related to agriculture, and government policy makers.

Objectives of the course

- To reorient a wide range of stakeholders on the landscape resource conservation approach for achieving land degradation neutrality and sustainable crop intensification
- To introduce the concept of land resource inventory along with hydrology in designing and developing landscape-based resource conservation measures along with exposure visits
- To discuss science-policy gap in natural resource management and developing strategies for scaling up

Approach and methodology of training:

This training program will be a mix of classroom teaching, interactive discussions, case study discussion about current challenges and possible solutions. Participants will be taken to the existing project sites to witness the science-led approaches and methods used for addressing various challenges of water scarcity, land degradation and poor agricultural and livestock productivity. Participants will be experiencing the outcome of various good practices of land-water-crop-tree-livestock management those holds huge potential for scaling up. Participants will be facilitated to share their experiences in dealing with such challenges. The program will also cover how complex science outcomes to be used in decision making process in solving various challenges.

Outlines of the course

(Topics covered during the course)

- Landscape Resource Conservation approach for intensification and diversification
- Concept of Land Resource Inventory (LRI) and landscape hydrology
- Integration of Land Resource Inventory and hydrology for addressing demand-supply gap
- Concept of water budgeting (field, watershed, catchment and river basin scale) and its interconnectivity
- Concept of nature-based solution and ecosystem services
- Quantification of ecosystem services and its trade-offs
- Analysing water-energy-carbon nexus
- Study tour to the pilot sites (Lalitpur, Jhansi in Bundelkhand region, Central India) to witness landscape-based resource conservation measures and its impact on building system level resilience
- Traditional rainwater harvesting system of central India (haveli cultivation) for groundwater recharge and transforming agriculture
- Visit to World Heritage Irrigation Structure (Sukwa-Dukwan Dam) at Lalitpur
- Strategies of rainfed and irrigated ecosystems for enhancing resource use efficiency
- Discussion on science-policy gap in natural resource management
- Developing scaling up strategies considering different states (low, medium and high rainfall regions) and different land use and cropping systems

Application:

Prospective applicants from any country except India can be able to apply for the course on the website of ITEC, Govt of India, using the link below:

[ITEC :Indian Technical and Economic Cooperation](#)

Note: The potential candidate after filling the form online, may need to submit a copy of the filled application to the Indian Embassy/consulate in their country for funding approval.

Contact

Dr Ramesh Singh

ICRISAT, Email: ramesh.singh@icrisat.org

Dr Padmaja Ravula

ICRISAT, Email: padmaja.ravula@icrisat.org