Improved Climate Change Adaptation Strategies in Water Resources

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Overview

In a country like India, the potential implications of climate changes are enormous not only on the natural and environmental systems but also on significant sectors of rural and urban society. Adaptation with responsibility is the principal way to deal with the impacts of a changing climate on water resources. Growing population and increased water demand from different sectors along with consequences of climate change are threatening the water security of this country by imposing significant strains on river basins and water networks. To mitigate and adapt these strains that developed with compounded effect of climate change, and to maximize the potential economic opportunity that a well-managed water resource system can offer, there is a need for a proactive approach and comprehensive understanding of improved adaptive strategies. This course will offer practical examples and case studies of how adaptation research in the Europe and Indian context can contribute to guide policy makers in water and other environmental sectors to make better decisions on water Security.

Objectives

The primary objectives of the course are as follows:

1. To provide background information on fundamental approaches and concepts of climate change adaptation
2. To equip participants to identify strategic climate change adaptation actions that will reduce climate change impacts
3. To learn about new opportunities and challenges in climate science related to water sector to face uncertain future under climate change
4. To identify the role of institutional adaptive capacity of different organizations working on water theme.

Modules	**Duration:** **12 November 2018- 16 November 2018** **Schedule:** 1. Understanding implications of climate change for adaptation planning a. The new scenario framework – RCPs, SSPs and SPAs b. Climate change in India – scenario uncertainties and why? 2. Understanding the combined impacts of climate and socio-economic change a. Future socio-economic change and the implications of using sectoral vs system/multi-sectoral models for Impacts and Adaptation b. Using models to understand the hydrological impacts of climate change in India 3. Adaptation in the 'real world' and in models a. Impacts, Adaptation and Vulnerability: Global/ Local examples b. Constraints on adaptation and how models handle adaptation 4. Successful climate change adaptation a. How to define successful adaptation b. Climate change adaptation in India and Europe 5. Institutional adaptive capacity a. Change Adaptation by Water Management Institutions in India b. Best practice in modelling impacts of and adaptation to global climate change *[Number of participants for the course will be limited to seventy]*
Who can attend	The audience for this short-term course is professionals at organizations that manage environmental resources, teachers and students from different national institutions & universities, policy organizations with urban / peri-urban, coastal or watershed-based focus and NGOs and other professionals working in water sector.
Fees	Participants from abroad : US $150 Industry/ Research Organizations: INR 15000 Faculty from Academic Institutions: INR 8000 Students from academic institutions: INR 3000 The above fee include all instructional materials, computer use for tutorials and assignments, laboratory equipment usage charges, 24 hour free internet facility. The participants will be provided with accommodation on payment basis.

The Faculty

Prof. Ian Holman is a Professor in Integrated Land and Water Management at Cranfield University, the UK's only exclusively postgraduate university. He has over 25 years of experience in sustainable land and water resource management and has managed over £3.7M worth of research and consultancy for a range of public and private funders. Prof. Holman brings his interdisciplinary hydro(geo)logical and spatial pedology expertise to climate change impacts and adaptation research for a range of Governmental, non-governmental and commercial organizations. Having been lead author of the UK's first regional integrated assessment of the effects of climate and socio-economic change on land, coasts, water and biodiversity, Prof. Holman led the development of the interactive Regional Impact Simulator and the web-based CLIMSAVE Integrated Assessment Platform for participatory modelling of climate change impacts, adaptation and vulnerability assessment across Europe. He has worked with stakeholders in Europe and the UK to integrate qualitative and quantitative approaches for developing climate change adaptation strategies.

Dr Renji Remesan is an Assistant Professor of Water Engineering and Management in the School of Water Resources, Indian Institute of Technology Kharagpur. He has work experiences with different UK universities (University of Bristol, University of Hull, Cranfield University and Centre for Ecology and Hydrology, Wallingford) on different projects relating to water and land resources. His research interests include data subjectivity on hydrology, land surface processes and weather, impact of climate change on water resources, catchment modelling and water management.

Dr. Bhabagrahi Sahoo is an Assistant Professor of Water Engineering and Management in the School of Water Resources, Indian Institute of Technology Kharagpur. His current research interests are: Real-time mapping of riverine heavy-metal pollution, source-identification and vulnerability assessment using Remote Sensing (RS); Surface water assessment using deterministic, conceptual and RS approaches; Real-time flood and groundwater level forecasting; and Integrated river basin management involving eco-hydrology and climate change aspects. He has developed novel spectral fusion models and surface water–groundwater interaction models for real-time estimation of groundwater levels in both urban, peri-urban and rural areas

Course Co-ordinator

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