



175 YEARS OF
IIT ROORKEE
Estd. 1847



ONE DAY WORKSHOP ON "SUSTAINABLE AGRI-WATER USE"

Organized by
Department of Hydrology
IIT Roorkee

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Date : January 20, 2023
Venue : Seminar Hall, DoH

For registration

<https://forms.gle/U4hFr2gTU1u2CK9p9>



SCOPE OF SUSTAINABLE AGRI-WATER USE

This workshop aims at developing a brief understanding of water needs in agricultural activities. For growing water consumption in agriculture, there is a need to use land efficiently, thereby allowing more crop diversification and providing an important buffer against freshwater scarcity and climate variability. Indiscriminate resource use can lead to a reduction in water flows, changes in downstream access to water, soil water pollution, increased soil salinity, and reduction of wetlands that provide important ecological functions for biodiversity, and nutrient retention management. Sustainable management of agricultural-water through the adaptation of best irrigation and agricultural practices can provide solutions to these problems and secure future agricultural demands.

Unplanned agriculture activities may lead to water depletion and pollution due to overextraction and agricultural emissions. The Hindon sub-basin of the Gangetic plain is severely affected by these activities resulting in low river flow and increased pollutants concentration. This workshop, thus, particularly focuses on identifying the key factors affecting the Hindon river basin and formulating solutions for the implementation of a sustainable development plan. The workshop invites experts from premier institutes like Utrecht University, Netherlands, Wageningen University, Netherlands, IISER Kolkata, PSI Dehradun and ICAR-IIFSR, for dialogue exchange and discussions on the scope of 'Sustainable Agri-Water Use'.

PRE-WORKSHOP SCHEDULE

Day 1 (18th January 2023)
Field Visit to Hindon river basin (Site -1) Project discussion
Day 2 (19th January 2023)
Field Visit to Hindon river basin (Site -2) Project discussion

WORKSHOP SCHEDULE

20th January 2023

TIME	ACTIVITIES	
9:30-10:00 AM	WORKSHOP INAUGURATION	
10:00-10:30 AM	HIGH TEA	
10:30-01:00 PM	KEYNOTE SESSION – 1	
	Exploration of alternative agricultural production systems to improve water use efficiency and quality at farm and landscape levels	Prof. Jeroen C.J. Groot (Wageningen U)
	Understanding the impact of agricultural activity in groundwater by water isotopes and dual isotope of dissolved nitrate	Prof. Prasanta Sanyal (IISER Kolkata)
	Comprehensive assessment of vadose zone processes for sustainable Agri-water management	Prof. Brijesh K Yadav (IIT Roorkee)
	Towards an integrated modelling approach for water quality in India	Prof. Arthur Beusen and Dr. Hamdy Elsayed (Utrecht U)
01:00-02:00 PM	LUNCH BREAK	
02:00-03:30 PM	KEYNOTE SESSION – 2	
	Situation analysis of Agri-water in Hindon sub basin: A community perspective	Dr. Debashish Sen (PSI Dehradun)
	Sustainable Agri-water management through farming systems approach	Dr. Poonam Kashyap (ICAR-IIFSR)
03:30-04:00 PM	PROJECT DISCUSSION (Only for Speakers)	

RESOURCE PERSONS



Prof. Lex Bouwman
Professor
(Utrecht University)

Dr. Lex is a Professor at the Faculty of Geosciences, Utrecht University. He holds a PhD from Wageningen University and Research Centre on “Compilation of a global inventory of emissions of nitrous oxide”. He has contributed to Soil and Ground Water Laboratory (up till 2003) and the Team Climate Change and Global Sustainability (from 2003) of the Netherlands Environmental Assessment Agency (PBL). He is specialized in the field of Wastewater Flows, Agricultural Systems, Biogeochemistry, Integrated Assessment Modelling, and Land Use Change Modelling. His main research fields are nutrient dynamics in livestock and crop production systems, land use and grazing systems in the framework of the Integrated Model for the Assessment of the Global Environment (IMAGE), nutrient surface balances in agricultural and natural ecosystems, effluents from sewerage systems to drive a global model for riverine transport of dissolved and particulate N and P compounds from (agro-) ecosystems and point sources, etc.



Prof. Jeroen Groot
Associate Professor
(Wageningen University
& Research)

Dr. Groot is an Associate Professor at the Farming Systems Ecology group of Wageningen University. He holds a PhD in Agronomy and MSc in grassland science, animal physiology and tropical animal husbandry. His current research focuses on the analysis and improvement of cropping systems, farms, and rural livelihoods of smallholders in Asia, Africa, and Latin America. Dr. Groot played an important role in bridging the disciplinary divides in research and stakeholder-oriented processes. Currently, Dr. Groot has a coordinating role in integrated farming systems analysis addressing multi-scale issues of productivity, natural resource management, human nutrition, and gender equity for CGIAR Research Programs. Project sites are located in Asia (e.g., Nepal, Bangladesh), Africa (e.g., Ghana, Tanzania, Ethiopia, Malawi) and Latin America (e.g., Ecuador, Uruguay, and Mexico).



Prof. Prasanta Sanyal
Professor
(IISER Kolkata)

Dr. Sanyal is a Professor at the Indian Institutes of Science Education and Research, Kolkata, India. He holds Ph.D. from Physical Research Laboratory, Ahmedabad, and M.Sc. in Applied Geology from Jadavpur University, India. He is specialized in the field of Paleoclimatology, Paleomonsoon, Paleoecology, and River Response to Climate. He has served as assistant professor at IIT-Kharagpur, India from Jan 2006 - Dec 2010 and as research scientist at Indiana University, USA from May 2009 - July 2009. Prof. Sanyal has been granted the National Geoscience Award for his significant work in the field of basic Geosciences-Ministry of Mines, 2014. His main research interest lies in evolution of Indian monsoon and its effect on ecosystem and landforms, carbon isotope thermometry etc.



Prof. Arthur Beusen
Assistant Professor
(Utrecht University)

Dr. Arthur is an Assistant Professor at the Faculty of Geosciences, Utrecht University. He obtained his MSc in applied and numerical mathematics at Radboud University Nijmegen with an emphasis on computer science. He is an expert in designing, integrating, calibrating, and evaluating complex environmental computer models, both on a local and global scale. His interests lie in thorough, theoretical foundation of environmental issues while maintaining a clear and practical perspective on concrete applications for use in both policy and science. The main area of his research is transport modeling the of nutrients from land to sea, which he has been involved in ever since 1992 on behalf of the RIVM/PBL Netherlands Environmental Assessment Agency.



Dr. Debashish Sen
Director
(People's Science
Institute, Dehradun)

Dr. Debashish is serving as the Director of People's Science Institute since 2015. He holds Ph.D. from Wageningen University and Research, Netherlands, and B.Tech. from Allahabad Agriculture Institute, India. He was the deputy director at People's Science Institute, Dehradun from Oct 2009 - Dec 2014. He also served as the founder director, Centre for Participatory Watershed Development (CPWD), Peoples' Science Institute, Dehradun (Sep 1996 - Sep 2009). He is specialized in the field of system of rice intensification, hydrological studies, catchment area treatment, participatory watershed development, environmental impact assessment of dams, biomass surveys, and micro-level water budgeting.



Dr. Poonam Kashyap
Senior Scientist
(ICAR-IIFSR,
Modipuram)

Dr. Poonam is working as a senior research scientist at ICAR-Indian Institute of Farming Systems Research, Modipuram since 2011. Her primary research interests are agricultural biotechnology, plant physiology, horticulture, and plant genetics. She specializes in horticulture-based integrated farming systems, modern horticultural crop raising techniques, multi-layer farming for higher productivity, exotic vegetable production for higher benefits, protected horticultural crop cultivation, and horticulture for entrepreneurship development. She has worked as a scientist at ICAR-Regional IARI's Centre Shimla (Cereals and Horticultural Crops) from May 2008 - May 2011.

WORKSHOP CORDINATOR



Prof. Brijesh Kumar Yadav
Professor & Head
Department of Hydrology
Indian Institute of Technology (IIT) Roorkee