भाकृअनुप
ICAR

Training Brochure

Current Methodologies for Water Footprint Estimation and Techniques for Water Saving

(*Virtual Mode*)

March 18-20, 2024

भारतीय जल प्रबंधन संस्थान
ICAR-IIWM

ICAR-Indian Institute of Water Management (IIWM)
Bhubaneswar-751 023, Odisha

Rationale

India experiences a high degree of spatial variability of annual rainfall, the highest annual rainfall of 11,690 mm is recorded at *Mawsynram* near Cherrapunji, Meghalaya, and the lowest of 150 mm at Jaisalmer of Rajasthan. An average of 75% precipitation of in the country occurs during the southwest monsoon season (June to September) only. The country's vast cultivated area (82 M ha) is also still rainfed where productivity is low and unstable because of the vagaries of monsoon and rainfall variability. With rapid population growth and rising expectations of a better life, there will be an ever-increasing demand for water for competing sectors like domestic, industrial and agricultural needs. Therefore, the available utilizable water resources would be inadequate to meet the future water needs of all sectors unless the utilizable water is used efficiently by adopting suitable agro-techniques. Recognizing the importance of the above fact, our Country has developed water-saving irrigation technologies like resource conservation technology including laser levelling, improved irrigation methods including drip and sprinkler, rainwater harvesting and groundwater recharge techniques, diversification with low water requirement crops, wastewater management, conjunctive and multiple use of water etc. to achieve per drop more crop'. But now the priority is the development of the indices that indicate appropriation of freshwater resources from a particular management system. In this regard, water footprints, which is the "ratio of the volume of consumptive water use to the quantity of produce of interest" can be used to indicate both direct and indirect appropriation of freshwater resources (Hoekstra, 2003; Hoekstra and Chapagain, 2008). The term "freshwater appropriation" includes both consumptive water use (the green and blue water footprint) and the water required to assimilate pollution (the grey water footprint), (Postel et al., 1996 and Chapagain et al., 2006).

The proposed course modules will cover the fundamental concepts of water footprint and protocols for estimation of blue, green and grey water footprints. Besides this, the effect of different water-saving techniques for increasing water productivity and reducing the carbon footprint will be covered in this training program. This training program will pave the way for increasing the green water footprint and reducing the blue water footprint, which is a matter of great concern in the face of the decline in the water table through the consumptive use of water and following improved water management strategies. The approaches and protocols conceptualized for this training program can be applied to any irrigated and rainfed regions of the Country with minor modifications. The Indian Council of Agricultural Research sponsored training programme is proposed to be organized in virtual mode for three days (March 18-20, 2024) at ICAR-Indian Institute of Water Management, Bhubaneswar.

Objectives

The training programme is conceptualized with the following specific objectives:

- To familiarize participants with the protocols for the estimation of green water, blue water and grey water footprints for different crops
- To disseminate methods for water saving and conjunctive use of water resources for reducing water footprint and enhancing agricultural water productivity

Course Content

The training programme will broadly cover the lectures and practical modules pertaining to protocols for estimation of green water, blue water and grey water footprints and reducing footprints through improved water management strategies and conjunctive use of groundwater and surface stored water. Under this initiative, different course modules will cover the following areas (i) Concept of water footprint and its importance in agriculture; (ii) Protocols for estimation of green water, blue water and gray water footprints (iii) Conjunctive water use (CWU) for improving water productivity and reducing water footprint in agriculture; (iv) Conservation agriculture and Resource conservation technologies for reducing water footprint; (v) Rainwater harvesting and management for reducing green water footprint; (vi) Irrigation scheduling in different crops under different surface irrigation methods for reducing water footprint; (vii) Irrigation scheduling under micro irrigation methods for reducing water footprint (viii) Technologies for reducing water footprint and enhancing water productivity in different crops and cropping systems; (ix) Irrigation water quality issues and remedial measures & use of poor-quality water in irrigation for reducing water footprint; (x) Crop planning based on water footprint; (xi) Groundwater management for reducing water footprint; (xii) Optimization of Water-Energy-Food nexus for reducing water and energy footprint etc.

Level and Type of Participants

This programme is open for young and active academicians not below the rank of Assistant Professor / Scientist having research/teaching experience in MoJS/ CGWB/CWC/SAUs and CAUs'/ICAR Institutes in the field of Agricultural Engineering / Civil Engineering with specialization in irrigation and drainage engineering and soil and water conservation engineering related subjects / Soil Science / Agricultural Physics / Agronomy/ Environmental Science or any other related discipline having basic working experience on irrigation science and agricultural water management. The applicant should normally be less than 45 years of age. The total number of participants shall be limited to 30. It is also expected that participants should have direct working experience/linkages with irrigation and water management for its development/operation and maintenance/research/execution and other related activities.

zoom

Zoom link details will shared to the registered candidates and after successful completion of the training certificate will be issued.

Course Coordinator

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Course Co-Coordinators

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Dr. Ashok K. Nayak, Principal Scientists, ICAR-IIWM, Bhubaneswar

Registration Form

Online Training Programme on

"Current methodologies for water footprint estimation and techniques for water saving"

(18-20 March, 2024)

Organized by ICAR-IIWM, Bhubaneswar, Odisha

(Registration deadline: 14th March 2024)

Name in Full:	
Designation:	
Email Id:	
Mobile No:	
Organization Name:	
Address:	
Educational Qualification:	
Area of Specialization	
It is certified that the above information furnished above are correct.	
Signature of the Candidate	
Recommendation of the Competent Authority	
Signature with Seal and date	

Please register online using Google Form:
https://docs.google.com/forms/d/1VsyXc8XFFssWYgZKfj6e4jeYsvXfNDQJ-88qeZeiMqM