

**Five-day
Training Workshop
on
SCIENTIFIC DATA COLLECTION AND
PROCESSING TECHNIQUES FOR
SPRINGSHEDED MANAGEMENT AND
REJUVENATION
(December 13– 17,2021)**

Organized by



**NORTH EASTERN HYDRAULIC & ALLIED
RESEARCH INSTITUTE (NEHARI),
BRAHMAPUTRA BOARD
RUDRESWAR, GUWAHATI-30, ASSAM**

In association with



**NATIONAL INSTITUTE OF HYDROLOGY
JAL VIGYAN BHAWAN
ROORKEE - 247667
UTTARAKHAND, INDIA**



**&
CENTRAL GROUND WATER BOARD (CGWB)
BHUJAL BHAWAN,
FARIDABAD - 121001**

INTRODUCTION :

There is increasing evidence that springs are drying up or their discharge is reducing throughout the Himalayan region. The erratic rainfall pattern, seismic activity and ecological degradation associated with land use change for infrastructural development is putting huge pressures on mountain aquifer systems. It is reported that half of the perennial springs have already been dried up or have become seasonal resulting into acute water shortage for drinking and other domestic purposes across hundreds of Himalayan villages. Any change in spring-hydrology has clear ramifications on river hydrology, whether in the headwater regions, where springs manifest themselves at sources of rivers or in the lower-reach plains of river systems where they contribute almost invisibly as base flows to river channels. The magnitude of the problem is exemplified by the high dependency of Himalayan populations on spring water on one hand and the deteriorating status of springs on the other. The ignorance of springs in the larger context of rivers, watersheds and aquifers is also a reason for great concern as such ignorance has led to large gaps in practice and policy in developing any strategic national response to spring water management in India.

Acknowledging the importance of springs in Himalayan ecosystem and regional water needs, NITI Aayog, in one of its reports, has emphasized on the systematic mapping of springs across the Himalayas and strengthening the capacity building exercise of the relevant stakeholders. It also impressed upon the need of creation of web-

enabled database or Web-GIS portal for spring geo tagging for efficient monitoring. Under various activities to be done towards safeguarding the spring system of Himalayas, National Institute of Hydrology (NIH) is striving for establishment of a systematic research programme within at least a selection of the clusters of springs within the first pilots to intensively measure and monitor short and long duration variable frequency datasets. The activities aim to develop analytics from these datasets for forward decision support of the field-activities and to establish a benchmarking system in partnership with Central Ground Water Board (CGWB).

COURSE STRUCTURE :

The training workshop will be conducted physically and will consist of lectures by experts from NIH and CGWB to provide an overview on Springshed Management. Various concepts pertaining to Spring hydrology, Springshed mapping, Springshed rejuvenation, Isotopic techniques in spring related study, Data collections using mobile application and processing in GIS platform, Water chemistry and geochemical analysis of spring water etc. will be discussed in various session to help participants in developing the understanding about Springshed management and its need. The session will comprise hands-on exercises along with the lectures. The 'Information System for Himalayan Springs for Vulnerability Assessment and Rejuvenation' i.e., ISHVAR Web-GIS portal developed by NIH under will also be demonstrated.

WHO CAN PARTICIPATE ?

The training is intended for junior to mid level Engineers of various State Government Departments of North Eastern Region of India actively working in water resources sector and aiming to better serve the Nation.

ABOUT NEHARI, BRAHMAPUTRA BOARD

Brahmaputra Board is a Statutory Body under the Department of Water Resources, River Development and Ganga Rejuvenation, Ministry of Jal Shakti, Government of India. Brahmaputra Board set up under Brahmaputra Board Act of 1980 and has been engaged in integrated water management of Brahmaputra and Barak Basins and overall water resources development in the North Eastern Region.

The North Eastern Hydraulic & Allied Research Institute (NEHARI), an arm of Brahmaputra Board was established at Rudreswar, North Guwahati in 1996. The primary objective of NEHARI is to carryout hydraulic model studies for planning and implementation of water resources projects. including testing of materials viz. soil, rock, concrete, construction material, etc. in its laboratories. Providing consultancy services for anti-erosion and flood control including R&D activities relating to river engineering are other functions of NEHARI. NEHARI also promotes capacity building exercises for its stakeholders in North Eastern Region of India.

ABOUT NIH

National Institute of Hydrology (NIH) is a premier Research and Development organization under the Department of Water Resources, River Development and Ganga Rejuvenation, Ministry of Jal Shakti, Government of India. It was established as an autonomous society in 1978 with its headquarters at Roorkee, Uttarakhand. The main objectives of NIH are to undertake, aid, promote and coordinate systematic and scientific work in all aspects of hydrology and water resources management. The Institute was declared a Science and Technology (S&T) organization in 1987.

ABOUT CGWB

Central Ground Water Board (CGWB) is a multi disciplinary scientific organization under the Department of Water Resources, River Development and Ganga Rejuvenation, Ministry of Jal Shakti, Government of India. CGWB was established in the year 1970. The main objectives of CGWB are to develop and disseminate technologies, monitor and implement national policies for the Scientific and Sustainable development and management of India's Ground Water Resources, including their exploration, assessment, conservation, augmentation, protection from pollution and distribution, based on principles of economic and ecological efficiency and equity.

REGISTRATION:

The registration to participate in this training workshop is free of cost. However, the number of

seats is limited to **25 participants** on first come first served basis. The interested participants are required to fill in the registration form online ([Click Here](#)). A nomination letter or a sponsorship certificate should be uploaded while submitting the application. TA / DA shall be borne by parent department. Boarding and Lodging including food shall be provided during period of training. Last date to submit the registration form is **9th December, 2021**. If needed, the intending participants may contact the course coordinator for further information.

COURSE COORDINATOR:

Shri Ranjit Deka, Director

North Eastern Hydraulic & Allied Research Institute (NEHARI), Brahmaputra Board
Rudreswar, North Guwahati – 781030

Email: neharibboard30@gmail.com

COURSE COORDINATOR (Technical):

Dr. Soban Singh Rawat, Scientist 'E'

Hydrological Investigation Division
National Institute of Hydrology, Roorkee

Shri Tapan Chakraborty, Scientist 'D' & OIC

State Unit Office

Central Ground Water Board, Shillong

PLACE OF TRAINING:

North Eastern Hydraulic & Allied Research Institute (NEHARI), Brahmaputra Board
Rudreswar, North Guwahati – 781030, Assam

NOMINATION FORM

**Five-day Training Workshop
on**

**SCIENTIFIC DATA COLLECTION AND PROCESSING
TECHNIQUES FOR SPRINGSHED MANAGEMENT
AND REJUVENATION**

December 13–17, 2021

Name: Mr./Ms./Mrs./Dr.

Designation:

Department/Organization:

Address:

Tel.No./Fax:

Email:

Qualification:

Field of Specialization:

Experience:

(Signature of the Candidate)

CERTIFICATE

Certified that Mr./Ms./Mrs./Dr.has been officially nominated /
deputed for the above mentioned training to be conducted by NEHARI, Brahmaputra Board in
association with National Institute of Hydrology (NIH) & Central Ground Water Board
(CGWB).

Signature of the Authority
with Office Seal and Date

Tentative Schedule for

“SCIENTIFIC DATA COLLECTION AND PROCESSING TECHNIQUES FOR SPRINGSHED MANAGEMENT AND REJUVENATION”

Date	Time	Topic/ Activity	Instructor
Day 1 13/12/2021 (Monday)	10:00 – 10:30	Registration	BB
	10:30 – 11:00	Inauguration	BB/CGWB/NIH
	11:00 – 11:30	Welcome Tea	
	11:30 – 12:15	Objective of training/Participants’ introduction	BB
	12:15 – 13:15	Overview of Springs: Importance, Problems, Genesis, Type and methodology for development	SSR (NIH)
	13:15 – 14:15	Lunch Break	
	14:15 – 15:00	Hydrogeology with special reference to Springs in NE States –State by States	SK (CGWB)
	15:00 – 16:00	Hydrogeology with special reference to Springs in NE States –State by States (Cont.)	SK (CGWB)
	16:00 – 16:15	Tea Break	
16:15 – 17:00	Discussion/Interaction	BB/CGWB/NIH	
Day 2 14/12/2021 (Tuesday)	10:00 – 11:00	Field instrumentation and water sampling for spring related investigation	SKS (NIH)
	11:00 – 11:15	Tea	
	11:15 – 12:15	Spring Vulnerability mapping	SSR (NIH)
	12:15 – 13:15	Spring data collection methodology & processing	SSR (NIH)
	13:15 – 14:15	Lunch Break	
	14:15 – 15:00	Electronic data collection techniques using open source mobile application	DSB (NIH)
	15:00 – 16:00	Hands-on exercise on mobile app for creating spring inventory	DSB (NIH)
	16:00 – 16:15	Tea Break	
	16:15 – 17:00	Discussion/Interaction	BB/CGWB/NIH
Day 3 15/12/2021 (Wednesday)	10:00 – 11:00	Water Chemistry and Geo-chemical Analysis of spring water	CGWB
	11:00 – 11:15	Tea	
	11:15 – 17:00	Field Visit Demonstration of Geotagging of springs, sample collection and in-situ analysis of spring water	BB

Tentative Schedule for

“SCIENTIFIC DATA COLLECTION AND PROCESSING TECHNIQUES FOR SPRINGSHED MANAGEMENT AND REJUVENATION”

Day 4 16/12/2021 (Thursday)	10:00 – 11:00	Scientific techniques for springshed mapping	SK (NIH)
	11:00 – 11:15	Tea	
	11:15 – 12:15	Estimation of spring aquifer recharge & dynamic storage of springs	DJK (CGWB)
	12:15 – 13:15	Introduction to GIS concepts	WRS (NIH)
	13:15 – 14:15	Lunch Break	
	14:15 – 15:00	Digital data creation, handling, and processing using open source GIS software	DSB (NIH)
	15:00 – 16:00	Digital data creation, handling, and processing using open source GIS software (Cont.)	DSB (NIH)
	16:00 – 16:15	Tea	
	16:15 – 17:00	Discussion/Interaction	BB/CGWB/NIH
Day 5 17/12/2021 (Friday)	10:00 – 11:00	Project formulation for spring rejuvenation studies	SK (NIH)
	11:00 – 11:15	Tea	
	11:15 – 12:15	Water Conservation efforts for sustainability of springs	BR (CGWB)
	12:15 – 13:15	Demonstration of ISHVAR Web-Portal for Ravi & Tawi Catchment of Himachal Pradesh	SSR (NIH)
	13:15 – 14:15	Lunch Break	
	14:15 – 15:15	Discussion & Feedback Session	CGWB/NIH
	15:00 – 15:45	Valedictory	BB/CGWB/NIH
	15:45 – 16:30	High Tea	

NIH : National Institute of Hydrology

SK : Dr. Sudhir Kumar, Scientist ‘G’
 SSR : Dr. Soban Singh Rawat, Scientist ‘E’
 SKS : Dr. Sanjay Kumar Sharma, Scientist ‘C’
 DSB : Dr. Deepak Singh Bisht, Scientist ‘B’
 WRS: Er. Waikhom Rahul Singh, Scientist ‘B’

CGWB : Central Ground Water Board

SK : S Kent, Scientist ‘B’
 KR : Dr. K. Radhapyari, Scientist ‘B’
 DJK : Dr. DJ Khound, Scientist ‘B’
 BR : Sh. Biplab Ray, Scientist ‘D’