



संख्या. T-980120/10/2023-NWA/2655-2704

Dated : 11.05.2023

प्रति,

NHP की सभी राज्य और केंद्रीय IAs (संलग्न सूची के अनुसार)

**विषय:** 12 से 16 जून 2023 के दौरान 'Introduction to Google Earth Engine and Its Applications in Water Resources Management' पर प्रशिक्षण कार्यक्रम - नामांकन के लिए अनुरोध!

महोदय/मैडम,

राष्ट्रीय जल अकादमी (NWA), केंद्रीय जल आयोग, पुणे 12 से 16 जून, 2023 के दौरान अपने परिसर में कक्षा मोड में राष्ट्रीय जल विज्ञान परियोजना (NHP) of DoWR, RD & GR, MoJS के तहत 'Introduction to Google Earth Engine and Its Applications in Water Resources Management' पर एक प्रशिक्षण कार्यक्रम आयोजित कर रहा है। प्रशिक्षण कार्यक्रम की विवरणिका और अनंतिम कार्यक्रम संदर्भ के लिए संलग्न हैं। इस कार्यक्रम का मुख्य उद्देश्य प्रतिभागियों को GEE प्लेटफॉर्म की क्षमता से परिचित कराना और जल संसाधन क्षेत्र से संबंधित कुछ विशिष्ट उदाहरणों का प्रदर्शन करना है।

यह कार्यक्रम NHP की केंद्रीय और राज्य कार्यान्वयन एजेंसियों (IAs) से संबंधित अधिकारियों के लिए है, जिन्हें रिमोट सेंसिंग, GIS और कंप्यूटर प्रोग्रामिंग की अवधारणाओं के बारे में बुनियादी ज्ञान है, लेकिन GEE प्लेटफॉर्म के लिए नए हैं। कार्यक्रम के लिए कोई कोर्स शुल्क नहीं है। प्रतिभागियों के आवास और बोर्डिंग का खर्चा NWA द्वारा किया जाएगा।

तदनुसार, यह अनुरोध किया जाता है कि कृपया उक्त प्रशिक्षण कार्यक्रम में भागीदारी के लिए अपनी एजेंसी /संगठन से 1-2 अधिकारियों को नामित करें। नामित अधिकारियों को 08.06.2023 तक इस फॉर्म (<https://forms.gle/9rrr5YUx2Bukm3Mq6>) को सकारात्मक रूप से भरने के लिए भी कहा जा सकता है। स्वीकृत नामांकनों की अंतिम सूची 09.06.2023 को NWA वेबसाइट पर प्रदर्शित की जाएगी।

यह मुख्य अभियंता, NWA, CWC, पुणे के अनुमोदन से जारी किया जाता है।

भवदीय

*K. S. Chaitanya*  
11/5/23

(चैतन्य के एस)

उप निदेशक एवं कार्यक्रम निदेशक

प्रतिलिपि:

- 1) Senior Joint Commissioner-I, NPMU-NHP, DoWR, RD & GR, MoJS, New Delhi NHP के MIS पर कार्यक्रम की घोषणा करने के अनुरोध के साथ
- 2) Director, RDC-I Dte, CWC, New Delhi
- 3) Director, Training Dte., CWC, New Delhi CWC अधिकारियों के नामांकन प्राप्त करने के अनुरोध के साथ

पुणे सिंहगड रोड,

खडकवासला आर.एस., पुणे 411024

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No. T-980120/10/2023-NWA/2655-2704

Dated : 11.05.2023

To,

All the State & Central Implementing Agencies of NHP (As per list enclosed)

**Sub:** Training Program on '**Introduction to Google Earth Engine and Its Applications in Water Resources Management**' during 12<sup>th</sup> – 16<sup>th</sup> June 2023 - Request for Nominations - Reg

Sir/Madam,

National Water Academy, CWC, Pune is organizing a training Program on '**Introduction to Google Earth Engine and Its Applications in Water Resources Management**' under National Hydrology Project (NHP) of DoWR, RD & GR, MoJS, Govt. of India during **12<sup>th</sup> to 16<sup>th</sup> June 2023** in physical mode in the campus of NWA. Brochure and tentative schedule of the training program are enclosed for ready reference. The main objective of this program is to introduce the participants to the potential of GEE platform and showcase a few specific examples related to water resources sector.

The program is intended for officers belonging to Central and State Implementing Agencies (IAs) of NHP who have basic knowledge about the concepts of Remote Sensing, GIS and Computer Programming but are new to GEE platform. There is no course fee for the program. The lodging & boarding of the participants will be borne by NWA.

Accordingly, it is requested to kindly nominate 1-2 officers from your agency/organization for participation in the said training program. Nominated officers may also be asked to fill up this form (<https://forms.gle/9rrr5YUx2Bukm3Mq6>) positively by 08.06.2023. The final list of accepted nominations will be displayed on NWA website on 09.06.2023.

This issues with the approval of Chief Engineer, NWA, CWC, Pune.

Yours Sincerely,

  
(Chaitanya K S)

Dy. Director & Course Director

Copy for kind information to:

- 1) Senior Joint Commissioner-I, NPMU-NHP, DoWR, RD & GR, MoJS, New Delhi with a request to announce the program on MIS of NHP
- 2) Director, RDC-I Dte, CWC, New Delhi
- 3) Director, Training Dte., CWC, New Delhi with a request to seek nominations of CWC officials





# Central Water Commission National Water Academy

## Introduction to Google Earth Engine & Its Applications in Water Resources Management (12-16, June 2023)

Google Earth Engine (GEE) is a platform for planetary scale analysis which is useful for translating geospatial datasets into meaningful analytics. GEE leverages Google's extensive cloud infrastructure to present several varied applications. GEE is free for non-commercial use and there is no additional software license that is required. This training program is designed for water resources professionals who have basic knowledge of Remote Sensing and Programming but are new to GEE platform



**Program Format:** Classroom lectures, Handson and self-practice sessions

**Who can attend:** Participants from Central and State Implementing Agencies (IAs) of NHP

**Fee:** There is no course fee

**Pre-requisites:** Basic knowlede about concepts of Remote Sensing, GIS and Computer Programming

**Registration:** Fill in the Google form below on or before 08.06.2023

<https://forms.gle/9rrr5YUx2Bukm3Mq6>

For any further information please contact:

Chaitanya K S

Dy. Director & Course Director

National Water Academy, Pune - 411024

Mob :9910771794 E-mail: deputydirector1-nwa@gov.in/nwa.mah@nic.in

**Central Water Commission  
National Water Academy**

**Tentative Session Plan  
Training program on**

**'Introduction to Google Earth Engine and its Applications in Water Resources Management'  
under National Hydrology Project (12-16 June 2023)**

Day & Date	Session	Topic
12.06.23 Monday	0900-1000	Registration & Inaugural Function
	1000-1130	Basics of Satellite Remote Sensing <i>Basic Principles of Remote Sensing; Type of sensors; Electromagnetic spectrum; surface interactions, Spectral reflection characteristics; SRC of water, Soil, vegetation etc.; Image resolutions, Band Math, Spectral Indices – NDVI, NDWI, VCI etc.,</i>
	1145-1315	Overview of Google Earth Engine (GEE)
	1430-1600	Getting started with GEE Code Editor (JavaScript API) + Hands-on <i>Components of GEE Code Editor; Familiarization with working of GEE Code Editor; JavaScript for GEE; Basic Java Scripts data types/variable types; Running the first script in GEE code editor; EE Objects and Methods; User Defined functions</i>
	1615-1800	
13.06.23 Tuesday	1000-1130	Working with Raster data using GEE + Hands-on
	1145-1315	<i>Importing/loading of Raster Data/Image and its visualization; Applying a computation to an image; Working with Single band Image/Multi band Image; True and false colour composites; Filtering of Image Collection; Setting up of bounds /extent for analysis; Computing NDVI through expression; Mapping a function over an image collection; UI chart; Statistics of an image region; Downloading/Exporting the data/results</i>
	1430-1600	
	1615-1800	
14.06.23 Wednesday	1000-1130	Working with Raster data using GEE + Hands-on (Contd.)
	1145-1315	
	1430-1600	Working with Vector data using GEE + Hands-on <i>Importing/Loading a Feature Collection; Feature Collection Visualization, information &amp; Metadata; Filtering a Feature Collection; Mapping over a Feature Collection &amp; Adding a new Attribute; Reducing a Feature Collection; Raster to Vector &amp; Vector to Raster conversion</i>
	1615-1800	
15.06.23 Thursday	1000-1130	Applications of GEE in Water Resources Sector: <i>Waterbodies Extraction and Mapping, Semi-Supervised Landcover classification, Irrigation Water Management etc.,</i>
	1145-1315	
	1430-1600	Applications of GEE in Water Resources Sector: <i>Time Series Analysis and Change Detection; Flood Mapping &amp; Monitoring; Drought Monitoring etc.,</i>
	1615-1800	
16.06.23 Friday	1000-1130	Introduction to GEE Apps: <i>UI Interface Overview; Widgets; Panels and Layouts; Building and Deploying EE Apps</i>
	1145-1315	
	1430-1600	
	1615-1730	Feedback & Valedictory Session