

# SKILL DEVELOPMENT TO USE SPATIAL DATA FOR NATURAL RESOURCES MANAGEMENT IN AGRICULTURE

21 DAYS HANDS-ON TRAINING ON RS & GIS USING QGIS

(14 Feb 2022 - 16 Mar 2022)



*Centre for Advanced Agricultural Sciences and Technology*



**NATIONAL AGRICULTURAL HIGHER EDUCATION PROJECT  
COLLEGE OF AGRICULTURAL ENGINEERING,  
JAWAHARLAL NEHRU KRISHIVISHWA VIDYALAYA  
JABALPUR, MP, 482004**

**Project website: [www.nahep-jnkv.org](http://www.nahep-jnkv.org)**

## **Chief Patron**

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**Dr. R. K. Nema**

PI, NAHEP CAAST

## **Program Organizer & Training Coordinator**

**Dr. M. K. Awasthi**

Co-PI NAHEP (Skill Development)

## **About Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur**

Jawaharlal Nehru Krishi Vishwavidyalaya established on October 2, 1964, is a forerunner university located in Jabalpur, Madhya Pradesh. The university is awarded Sardar Ballabh Bhai Patel Outstanding University Award for the year 2018 by the Indian Council of Agricultural Research, New Delhi. The university has various constituent colleges, Agricultural Research Stations, and Krishi Vigyan Kendra's. The University offers Bachelor's, Master's, and Doctoral degrees in the Faculty of Agriculture and the Faculty of Agricultural Engineering. The University also offers diploma courses of two years in "Seed Production" and "Nursery Management" at Horticulture Vocational Education Institute, Garhakota, Sagar, MP.

### **About NAHEP**

NAHEP is designed to strengthen the national agricultural education system in India with overall objective to provide more relevant and high-quality education to agricultural university students. This programme has been promoting efficiency and competitiveness through changes in working mechanism of agricultural universities, raising the teaching and research standards through improved research and teaching infrastructure and enhanced faculty competency and commitments, and making agricultural education more attractive to talented students. There are four key components under NAHEP, namely; Institutional Development Plan (IDP), Centers for Advanced Agricultural Sciences and Technology (CAAST), ICAR to support excellence in agricultural universities (AUs), and ICAR Innovation Grants to AUs

## **Skill Development to use Spatial Data for Natural Resource Management in Agriculture**

### **Objectives:**

- To build basic capacity for using RS & GIS techniques applied for betterment of Natural Resource Management particularly in Agriculture and allied sectors.
- To identify appropriate techniques for integration of spatial and ground data to realize problems related to land, water and vegetation.
- To develop user friendly spatial data products using identified technologies for policymakers, researchers, field workers and farmers.

## About the Educative learning program of Agriculture Executives

Online training on intended to cover the basics of RS & GIS as well as empowering participants to efficiently read and use the information contained on various classified maps that are readily available or will become available in the future for various planning purposes.

### Address for Correspondence

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### Participants

University Teachers/Faculty Members/Scientists/Technical staff are invited to participate in this on-line training program. This training program will help them to apply basic RS and GIS application techniques in Agriculture.

### Registration Details:

Please fill the Google registration form for registering on this training

<https://forms.gle/ZVqA7LkitC76ateh8>

The registration link will be closed by 5.00 pm at 13.01.2022

### Webex Meeting Details

**Link will be shared to all the selected participants by NAHEP Project**

#### **Please Note:**

- Training seats are limited, participants list will be finalized by project based on their eligibility
- Attendance of participants will be monitored for all the training sessions. 75% of the training attendance

- **Training Title: “Hands on Training on Remote Sensing and GIS Using QGIS”**

- **(14 Feb 2022 – 16 Mar 2022)**

- **Course Coordinator: Dr. R. K. Nema**
- **Training Coordinator: Dr. S. K. Sharma**

Date	Time	Topic	Faculty
14/02/2022	2.45 pm to 3.00 pm	Inauguration	Dr. R. K. Nema Dr. M. K. Awasthi Dr. S. K. Sharma
	3.00 pm to 6.00 pm	Basics of Remote Sensing and its application in agriculture <b>(Distinguished Scientist Lecture)</b> Pre-Training Test Interaction with participants	
15/02/2022	3.00 pm to 6.00 pm	Satellites, Sensors, and Resolution & Visual Interpretation of Satellite Imagery	Dr. Arpna Bajpai
17/02/2022	3.00 pm to 4.30 pm	Different Geoportals (Earth explorer, Bhuvan, Copernicus ESA, etc.). Introduction to GIS	Dr. Sourabh Nema
	4.30 pm to 6.00 pm	<b>Distinguished Scientist Lecture</b>	
18/02/2022	3.00 pm to 5.00 pm	Introduction of QGIS, Downloading & Installation of QGIS Software	Er. Krishna Singh
	5.00 to 6.00 pm	<b>Distinguished Scientist Lecture</b>	
21/02/2022	3.00 pm to 4.30 pm	Introduction of QGIS open-source software & its overview	Er. Rachit Nema
	5.00 pm to 6.00 pm	<b>Distinguished Scientist Lecture</b>	
22/02/2022	3.00 pm to 6.00 pm	Georeferencing of Map	Dr. P. S. Pawar
23/02/2022	3.00 pm to 6.00 pm	Generation of vector features such as Point, Line, and Polygon, filling data in the attribute table and area calculation.	Dr. P. S. Pawar
24/02/2022	3.00 pm to 6.00 pm	Downloading of Landsat-8 satellite dataset and about bands information.	Mr. Sumit Kakade
25/02/2022	3.00 pm to 6.00 pm	Layer stacking of different bands and clipping of Area of Interest (AOI) Continue.....	Dr. Arpna Bajpai
28/02/2022	3.00 pm to 6.00 pm	Band combinations for agriculture applications using False Colour Composite (FCC).	Er. Anjali Patel

02/03/2022	3.00 pm to 6.00 pm	Pre- Processing of Landsat 8 using SCP	Er. Anjali Patel
03/03/2022	3.00 pm to 6.00 pm	Region of Interest (ROI) and Creating Training Dataset	Dr. Devendra Vasht
04/03/2022	3.00 pm to 6.00 pm	Introduction of Classification, Supervised classification using Minimum distance algorithm	Dr. Devendra Vasht
07/03/2022	3.00 pm to 6.00 pm	Introduction of Classification, Supervised classification using Minimum distance algorithm	Dr. Umakant Rawat
08/03/2022	3.00 pm to 6.00 pm	Supervised classification using Minimum distance algorithm	Mr. O. P. Prajapati
09/03/2022	3.00 pm to 6.00 pm	Area Calculation of LU/LC classified data	Mr. O. P. Prajapati
10/03/2022	3.00 pm to 4.30 pm 4.30 pm to 6.00 pm	Map Layout Creation <b>Distinguished Scientist Lecture</b>	Er. Alok Rajput
11/03/2022	3.00 pm to 6.00 pm	Installation of QuickOSM plugin and downloading of OSM data	Dr. Umakant Rawat
14/03/2022	3.00 pm to 4.30 pm 4.30 pm to 6.00 pm	DEM data processing (Drainage/ Watershed Delineation) <b>Distinguished Scientist Lecture</b>	Er. Aniket Rajput
15/03/2022	3.00 pm to 6.00 pm	DEM data processing (Elevation, Slope, Aspect, contour map preparation) & external thematic maps using WMS layers	Er. Aniket Rajput
16/03/2022	3.00 pm to 4.30 pm 4.45 pm – 6.00 pm	<b>Distinguished Scientist Lecture</b>  Presentation by Participants on LU/LC & Thematic maps (as prepared during exercise) Post Training Assessment & Valedictory Function	Dr. R. K. Nema Dr. M. K. Awasthi Dr. S. K. Sharma