

INSTITUTE OF VOCATIONAL STUDIES

REPORT ON EXTENSION LECTURE

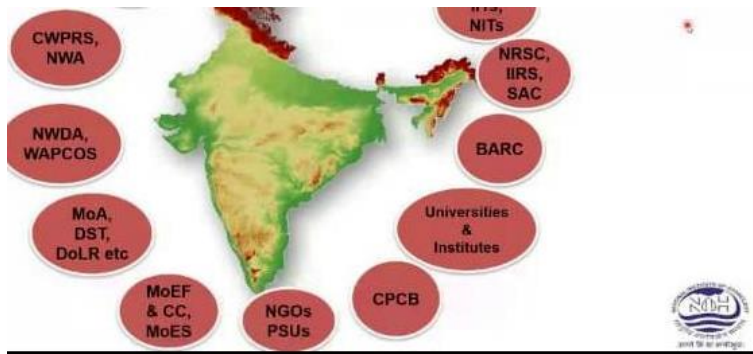
UNDERSTANDING THE CLIMATE CHANGE AND IT'S IMPACT ON WATER RESOURCES

Date: 09/02/2024

On February 9, 2024 a thought-provoking extension lecture was conducted on the topic "Understanding Climate Changes and their Impact on Water Resources." The lecture was organized under the guidance of Dr. Mandira Gupta, Principal IVS and organizing secretary Dr. Parul Maheshwari, Associate Professor. The distinguished resource person for the day was Dr. Manish K Nema, currently serving as Scientist - E at the National Institute of Hydrology, Roorkee. Dr. Manish K Nema brings a wealth of experience to the field of water resources, boasting more than 17 years in Research and Development. His specialization in water resources has led him to independently handle various technical and administrative responsibilities throughout his career. Dr. Nema provided a comprehensive overview of the current climate changes and their global implications, setting the stage for understanding the subsequent impact on water resources. The speaker elucidated the intricate dynamics of water resources, emphasizing the vulnerability of these systems in the face of climate variations. Dr. Nema used graphs and diagrams effectively to illustrate patterns, trends, and potential future scenarios, facilitating a better grasp of the presented information.

The extension lecture proved to be a valuable platform for gaining insights into the critical interplay between climate changes and water resources. Dr. Manish K Nema's expertise and engaging presentation style left a lasting impact on the audience, contributing to a heightened awareness of the challenges and opportunities in managing water resources in the context of a changing climate.

Hoping to see him soon to share is views and knowledge in more mind enriching lectures.



s presenting

A screenshot of a Zoom meeting interface. At the top, it says "s presenting". Below this are two icons: a microphone with a slash through it (muted) and a square with four arrows pointing outwards (fullscreen). The main area shows a grid of video tiles. The top-left tile is active, showing a man with glasses speaking. To his right are two tiles: one for "Udita" and one for "Sapna". Below these are three more tiles, all with muted icons (microphone with slash) and no video, indicating they are muted participants.



CLIMATIC ZONES IN INDIA, BASED ON THE KÖPPEN CLASSIFICATION SYSTEM

- Alpine E (ET_h)
- Humid Subtropical C (C_{wa}, C_{wb})
- Tropical wet-dry A (A_w, A_s)
- Tropical wet A (A_m)
- Semi-arid B (B_{Sh})
- Arid B (B_{Wh})



Manish is presenting



Manish



Udita



Shivangi

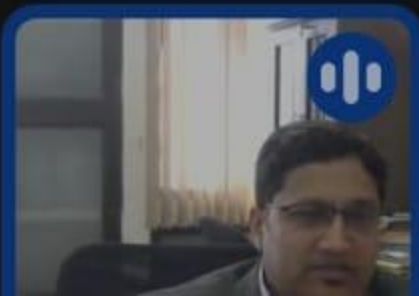


CONSEQUENCES OF CLIMATE CHANGE

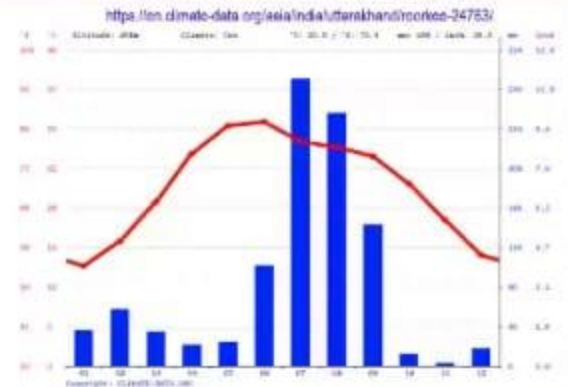
- Temperature change causes alteration in
 - ❖ Relative humidity,
 - ❖ Vapour pressure and
 - ❖ Evaporation from land and water bodies
- These relations are largely **nonlinear** in nature (FAO, 1998).
- Increasing temperatures generally result in an increase in the **water-holding capacity of the atmosphere** that leads to a change in precipitation patterns and an increase in atmospheric moisture.
- Warmer temperatures could lead to a more **active hydrological cycle** and changes in atmospheric circulation
 - ❖ Temporal and spatial water availability may be affected (Surface and Ground Water Both)
 - ❖ Frequent occurrence of Flood and Drought (Changes in Intensity, Frequency and Magnitude)
- Effect on glaciers and snowfields
- Effect on Groundwater quality in alluvial aquifers
- Influence on Groundwater recharge
- Increased saline water intrusion in coastal and island aquifers due to rising sea levels



Manish is presenting



IS THIS WEATHER OR CLIMATE?



Weather is the day-to-day state of the atmosphere, and its short-term variation in minutes to weeks.

- ❖ How hot is it right now?
- ❖ What will it be like today?
- ❖ Will we get a snowstorm this week?

Climate is the weather of a place averaged over a period of time, often 25-30 years



The long-term averaged weather of a place is known as Climate (जलवायु / आबोहवा).

Manish is presenting

Manish

Udita

Shivangi