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Urban Resilience and Adaptation for India and Mongolia: curricula, capacity, ICT and stakeholder collaboration to support green & blue infrastructure and nature-based solutions 619050-EPP-1-2020-1-DE-EPPKA2-CBHE-JP

International Doctoral Research Seminar

Urban Infrastructure Revitalisation in Prayagraj after 'Kumbh' 2019

Date : 13 April 2024, Saturday

Time : 02:30 – 03:30 pm IST

Abstract

'Kumbh Mela', religious festival and pilgrimage rotating between four sacred rivers, brings millions seeking solutions to everyday problems. This study analyzes the impact of 2019 Kumbh at Prayagraj on its land use and infrastructure. Using satellite images, urban expansion at the cost of vegetation and agriculture was found, while there was also increased greenery due to successful agroforestry policies. MLC Supervised classification was conducted to prepare LULC maps. Major infrastructure changes included a new airport, road widening, and railway tracks. These insights can guide sustainable planning and development for future 'Kumbh' in other pilgrimage cities.



Speaker

Ms Divyata Yadav

Research Scholar

School of Environmental Sciences

Jawaharlal Nehru University, New Delhi

Driven by a passion for environmental sustainability, Divyata Yadav leverages an MSc in Environmental Sciences from Jawaharlal Nehru University and an expertise in remote sensing to unveil the urban landscape's hidden stories. Utilizing satellite data, she paints a detailed picture of urban dynamics, tracking green spaces, and monitoring urban growth, all to inform resilient and sustainable city planning for a healthier future.

Supervisor:

Professor P K Joshi, School of Environmental Sciences, Jawaharlal Nehru University

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Facilitating Institution

Jawaharlal Nehru University

Speaker: **Ms Divyata Yadav, Jawaharlal Nehru University, New Delhi**

Topic: **Urban Infrastructure Revitalisation in Prayagraj after 'Kumbh' 2019**

The "Kumbh Mela" is a religious festival and pilgrimage that rotates between four sacred rivers, attracting millions of devotees seeking spiritual solace and solutions to everyday problems. Recognized as one of India's intangible cultural heritages, the Kumbh Mela's observance alternates between the cities of Haridwar, Ujjain, Nashik, and Prayagraj. The influx of pilgrims necessitates substantial changes to the infrastructure and services in the host city, offering a unique opportunity to analyze urban transformation and its impacts. This study focuses on the 2019 Kumbh at Prayagraj, examining the resultant changes in land use and infrastructure.

Utilizing satellite images, the study spans three phases: Pre-Kumbh (2016), Kumbh (2019), and Post-Kumbh (2022). The assessment reveals significant urban expansion at the expense of vegetation, fallow land, and agricultural areas. However, an increase in greenery due to successful agroforestry policies and plantation drives is also noted. Supervised classification, using the Maximum Likelihood Classifier (MLC), was employed to create Land Use and Land Cover (LULC) maps, providing a comprehensive visual representation of these changes.

Several key infrastructure developments were initiated in Prayagraj to accommodate the massive influx of pilgrims. New Airport Construction, Road Widening Projects, New Railway Tracks and Urban Beautification. These infrastructure upgrades not only supported the immediate needs of the Kumbh Mela but also provided long-term benefits for the city's residents and visitors.

The analysis of LULC changes indicates that urbanization in Prayagraj significantly increased during and after the Kumbh Mela. The construction activities and infrastructure development led to the reduction of agricultural land and vegetation. However, the city's proactive agroforestry policies mitigated some of these impacts, resulting in an observable increase in greenery. This dual outcome highlights the complex interplay between urban expansion and environmental sustainability.

The findings from this study offer valuable insights into the relationship between cultural events and urban infrastructure development. The experience of Prayagraj in managing the Kumbh Mela's demands provides a blueprint for other pilgrimage cities. Key takeaways include - Sustainable Planning, Infrastructure Resilience and Long-term Benefits.

The 2019 Kumbh Mela in Prayagraj prompted significant changes in the city's land use and infrastructure. The expansion of urban areas, coupled with environmental conservation efforts, illustrates the dual challenges of accommodating large gatherings while maintaining sustainability. These insights will guide future planning and development for Kumbh Mela and other similar events, ensuring that infrastructure improvements benefit both pilgrims and the host city in the long run. By learning from Prayagraj's experience, other cities can develop strategies for resilient and sustainable growth, preserving the delicate balance between cultural heritage and urban development.

More questions pertaining to Ms Divyata Yadav's research work can be corresponded through her email- divyatayadav2016@gmail.com

Diviyata Yadav (Presenting)



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URBAN INFRASTRUCTURE REVITALIZATION IN PRAYAGRAJ AFTER 'KUMBH' 2019

Diviyata Yadav
M.Sc. (Environmental Sciences)


Supervisor
Prof. P K Joshi

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2:33 PM | IDRS - Ms Diviyata Yadav

Participants: Diviyata Yadav, carolyne mate, Sadaf Fayaz, Jonathan Singit, Dr. Gurjeet Kaurr, Akhlaq Wani, Lipika biswas, 9 others, Prof. PK Joshi

Diviyata Yadav (Presenting)



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Recommendation

- Pilgrimage cities should be considered beyond cultural services and must focus on sustainable infrastructure.
- Geospatial tools efficient and effective for monitoring and assessment of development activities. These should be used in governance and decision making.
- Such studies need to be carried out in other 'Kumbh Mela' cities and/or pilgrimages of similar magnitude.
- Newer and focused models of city management and development should be prepared for pilgrimages and such studies should be consulted.

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2:52 PM | IDRS - Ms Diviyata Yadav

Participants: Diviyata Yadav, Dr. Gurjeet Kaurr, Akhlaq Wani, Jonathan Singit, Priyanka Sarsaiya, carolyne mate, Ashish Suman, 15 others, Prof. PK Joshi

This image shows a screenshot of a Zoom meeting interface. The meeting title is "IDRS - Ms Divyata Yadav" and the time is 3:01 PM. The interface features a grid of video thumbnails for participants. The participants visible are:

- Divyata Yadav
- Dr. Gurjeet Kaurr
- Akhiq Wani
- S. Jaya kumar
- Ashish Suman
- Debjani Ghosh
- Adarsh Singh
- Prof. PK Joshi

In the center of the grid, there is a placeholder for "13 others" with a large "S N" logo. The bottom of the screen displays a toolbar with icons for mute, video, chat, reactions, gallery view, hand raise, and a red end call button. On the right side, there is a vertical sidebar with icons for mute, video, chat, and a "LOG" button.