

# Rakesh KADAVERUGU



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<https://scholar.google.co.in/citations?user=4lURX1wAAAAJ&hl=en>

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## PROFILE

I have been associated with CSIR National Environmental Engineering Research Institute, Nagpur since 2010. My research objective is to better understand the socio-environmental systems at multiple spatial and temporal scales using geospatial, soft-computing, and process-based models.

## RESEARCH AREAS

- Urban micro-climate, regional weather and air quality modeling
- Socio-environmental systems modeling using process-based and data-driven methods
- Species habitat modeling of sensitive ecosystems using machine learning algorithms
- Quantification of ecosystem services of natural capital
- Process-based modeling of environmental systems like constructed wetlands, soil-tree systems
- Proficient in Linux Shell, R, OpenFOAM, WRF/Chem, QGIS, Blender, InVEST, parallel computing, and machine learning methods

## EXPERIENCE

*SENIOR SCIENTIST, CSIR NEERI, NAGPUR, INDIA – 2017-PRESENT*

*SCIENTIST, CSIR-NEERI, NAGPUR, INDIA – 2012-2017*

*QUICK HIRE SCIENTIST, CSIR-NEERI, NAGPUR, INDIA – 2010-2012*

## EDUCATION

National Institute of Technology, Warangal – PhD in Civil Engineering on Development of multi-scale air quality modeling Framework (2017-2021)

Academy of Scientific and Innovative Research, New Delhi - Masters in Environmental Systems Modeling and Optimization (2010-2012)

Indian Institute of Technology (ISM), Dhanbad - Bachelors in Environmental Science and Engineering (2006-2010)

## MEMBERSHIPS

- Fellow of IUCN Commission on Ecosystem Management (CEM)
- Member of Institution of Engineers (India) M-1665507
- Member of International Environmental Modeling and Software Society 2021-2023

## PUBLICATIONS

1. **Kadaverugu R**, Dhyani S, Dasgupta R, et al (2021) Multiple values of Bhitarkanika mangroves for human well-being: synthesis of contemporary scientific knowledge for mainstreaming ecosystem services in policy planning. *J Coast Conserv* 25:32. <https://doi.org/10.1007/s11852-021-00819-2>
2. **Kadaverugu R**, Gurav C, Rai A, et al (2021) Quantification of heat mitigation by urban green spaces using InVEST model—a scenario analysis of Nagpur City, India. *Arab J Geosci* 14:82. <https://doi.org/10.1007/s12517-020-06380-w>
3. **Kadaverugu R**, Matli C, Biniwale R (2021) Suitability of WRF model for simulating meteorological variables in rural, semi-urban and urban environments of Central India. *Meteorol Atmos Phys*. <https://doi.org/10.1007/s00703-021-00816-y>
4. **Kadaverugu R**, Purohit V, Matli C, Biniwale R (2021) Improving accuracy in simulation of urban wind flows by dynamic downscaling WRF with OpenFOAM. *Urban Climate* 38:100912. <https://doi.org/10.1016/j.uclim.2021.100912>
5. **Kadaverugu R**, Sharma A, Matli C, Biniwale R (2019) High Resolution Urban Air Quality Modeling by Coupling CFD and Mesoscale Models: a Review. *Asia-Pacific Journal of Atmospheric Sciences*. <https://doi.org/10.1007/s13143-019-00110-3>
6. **Kadaverugu R**, Shingare RP, Raghunathan K, et al (2016) The role of sand, marble chips and Typha latifolia in domestic wastewater treatment—a column study on constructed wetlands. *Environmental technology* 37:2508-2515
7. **Kadaverugu R** (2016) Modeling of subsurface horizontal flow constructed wetlands using OpenFOAM®. *Modeling Earth Systems and Environment* 2:55
8. **Kadaverugu R** (2015) Framework for mathematical modeling of Soil-Tree system. *Modeling Earth Systems and Environment* 1:. <https://doi.org/10.1007/s40808-015-0017-2>
9. Kadaverugu A, **Kadaverugu R**, Chintala NR, Gorthi KV (2021) Flood vulnerability assessment of urban micro-watersheds using multi-criteria decision making and InVEST model: a case of Hyderabad City, India. *Model Earth Syst Environ*. <https://doi.org/10.1007/s40808-021-01310-5>
10. Dhyani A, **Kadaverugu R**, Nautiyal BP, Nautiyal MC (2021) Predicting the potential distribution of a critically endangered medicinal plant *Lilium polyphyllum* in Indian Western Himalayan Region. *Reg Environ Change* 21:30. <https://doi.org/10.1007/s10113-021-01763-5>

11. Dhyani S, Bartlett D, **Kadaverugu R**, et al (2020) Integrated Climate Sensitive Restoration Framework for transformative changes to Sustainable Land Restoration. *Restoration Ecology*. <https://doi.org/10.1111/rec.13230>
12. Dhyani S, **Kadaverugu R** (2020) Food security and cultural benefits from urban green spaces: Exploring urban foraging as a silently growing global movement. *Clim Chang and Environ Sustain* 8:219. <https://doi.org/10.5958/2320-642X.2020.00022.8>
13. Dhyani S, **Kadaverugu R**, Dhyani D, et al (2018) Predicting impacts of climate variability on habitats of *Hippophae salicifolia* (D. Don) (Seabuckthorn) in Central Himalayas: Future challenges. *Ecological Informatics*. <https://doi.org/10.1016/j.ecoinf.2018.09.003>
14. Dhyani S, **Kadaverugu R**, Pujari P (2020) Predicting impacts of climate variability on Banj oak (*Quercus leucotrichophora* A. Camus) forests: understanding future implications for Central Himalayas. *Regional Environmental Change* 20:. <https://doi.org/10.1007/s10113-020-01696-5>
15. Dhyani S, Murthy IK, **Kadaverugu R**, et al (2021) Agroforestry to Achieve Global Climate Adaptation and Mitigation Targets: Are South Asian Countries Sufficiently Prepared? *Forests* 12:. <https://doi.org/10.3390/f12030303>
16. Dhyani S, Singh S, **Kadaverugu R**, et al (2020) Habitat Suitability Modelling and Nature-Based Solutions: An Efficient Combination to Realise the Targets of Bonn Challenge and SDGs in South Asia. In: Dhyani S, Gupta AK, Karki M (eds) *Nature-based Solutions for Resilient Ecosystems and Societies*. Springer Singapore, Singapore, pp 347-364
17. Kumar P, **Dasgupta R**, Dhyani S, et al (2021) Scenario-Based Hydrological Modeling for Designing Climate-Resilient Coastal Water Resource Management Measures: Lessons from Brahmani River, Odisha, Eastern India. *Sustainability* 13:6339. <https://doi.org/10.3390/su13116339>
18. Dasgupta R, Dhyani S, Basu M, **Kadaverugu R**, et al (2021) Exploring Indigenous and Local Knowledge and Practices (ILKPs) in Traditional Jhum Cultivation for Localizing Sustainable Development Goals (SDGs): A Case Study from Zunheboto District of Nagaland, India. *Environmental Management*. <https://doi.org/10.1007/s00267-021-01514-6>

13 conference publications and 2 books

Rakesh Kadaverugu

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