

NARENDER REDDY KANGARI

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Early Career Scientist | Reading, United Kingdom | [LinkedIn](#)

Professional summary:

Early-career scientist with expertise in improving process-based land models to better represent vegetation dynamics and constrain carbon, energy, and water cycle estimates. Author of peer-reviewed publications spanning terrestrial flux modelling in agroecosystems (using CLM5 and ISAM) to machine-learning solutions for the renewable energy sector. Reviews for multiple international journals and organises departmental seminars and land-surface processes group meetings, including convening the UK-wide Land Modelling (JULES) 2026 Annual Meeting at the University of Reading. Actively mentors MSc and PhD students in producing high-quality, publishable research.

Skills:

Land-Surface Modeling | Process-Based Models (JULES, UM, CESM, ISAM, WRF, and SUCROS) | Land-Atmosphere Interactions | Climate-Change Impacts | Machine Learning in Climate science | Renewable Energy Meteorology | Scientific Writing and Publication | Strong Leadership | Scientific Project Management | Excellent Analytical Skills | Problem-Solving Skills | Work Independently and Collaboratively | Excellent Communication Skills | Proficient in Python, FORTRAN, Shell-scripting, and MATLAB | Experience in Machine learning techniques | Worked on High-Performance Computing (HPC) facilities |

Education:

Qualifications	Discipline	University	Year	Percentage
Ph.D.	Atmospheric & Oceanic Sciences	Centre for Atmospheric Sciences, IIT Delhi	2025	9 (CGPA)
M. Tech	Atmospheric & Oceanic Sciences	Centre for Atmospheric Sciences, IIT Delhi	2019	9.57 (CGPA) 1 st RANK
B. Tech	Mechanical Engineering	Vardhman College of Engineering, JNTU Hyderabad	2016	7.38 (CGPA)

Publications:

Research Papers (first author-published):

- Kangari, N. R.** (Previously Reddy, K. N.) and Baidya Roy, S.: Phenology, fluxes and their drivers in major Indian agroecosystems: A modeling study using the Community Land Model (CLM5), *Biogeosciences*, 23, 1365–1381, <https://doi.org/10.5194/bg-23-1365-2026>, 2026.
- Kangari, N. R.** (Previously Reddy, K. N.) et al.: Improving the representation of major Indian crops in the Community Land Model version 5.0 (CLM5) using site-scale crop data, *Geosci. Model Dev.*, 18, 763–785, <https://doi.org/10.5194/gmd-18-763-2025>, 2025.

3. **Kangari, N. R.**, (Previously Reddy, K. N.) et al.: Carbon fluxes in spring wheat agroecosystem in India, *Earth Syst. Dynam.*, 14, 915–930, <https://doi.org/10.5194/esd-14-915-2023>, 2023.
4. **Kangari, N. R.**, (Previously Reddy, K. N.) and Baidya Roy, S.: Layout Optimization for Offshore Wind Farms in India Using the Genetic Algorithm Technique, *Advances in Geosciences* 54 (October): 79–87. <https://doi.org/10.5194/adgeo-54-79-2020>, 2020.

Research papers (others):

1. Verhoef, A., Zeng, Y., Agam, N., Best, M., Bonetti, S., Boussetta, S., Chaney, N., Cuntz, M., Edwards, J., Gupta, S., Heitman, J., Huang, M., Jarvis, N., Jiang, S., Kandala, R., Kiałka, F., Lian, T., Mu, M., Nemes, A., Paulus, S. J., Raoult, N., **Reddy, K. N.**, Romano, N., Sabot, M., Vanderborght, J., van der Ploeg, M., van Oevelen, P., Wang, Y., Wang, Y., Weber, T. K. D., Marthews, T., & Weihermüller, L.: Rethinking Soils in Land Surface Models, *Bulletin of the American Meteorological Society*, 107(3), E665-E674. <https://doi.org/10.1175/BAMS-D-26-0003.1>, 2026.

Datasets:

1. Varma, G. V., **Reddy, K. N.**, Baidya Roy, S., Yadav, R., Gayatri, V., Biswas, R.: Indian cereal crops (wheat and rice) phenology and agricultural management data across Indian croplands from 1960's to 2020 [dataset], PANGAEA, <https://doi.org/10.1594/PANGAEA.964634>, 2024.
2. Varma, G. V., **Reddy, K. N.**, Baidya Roy, S., Yadav, R., Gayatri, V., Biswas, R.: Weather data at experimental agricultural sites across Indian croplands from 1960's to 2020 [dataset], PANGAEA, <https://doi.org/10.1594/PANGAEA.964635>, 2024

Voluntary work:

Reviewer:

1. Earth System Dynamics
2. Geoscientific Model Development
3. GIScience & Remote Sensing
4. Scientific Reports
5. All Earth
6. npjSustainableAgriculture

Awards and achievements:

1. Research Excellence Travel Award (RETA) from IRD, IIT Delhi for presenting my work at EGU 2024. (Award provided to top 5% doctoral students)
2. Research Scholar Travel Award (RSTA) from IIT Delhi for presenting my work at EGU 2023.
3. Ganga Devi and Khem Chand Memorial Award for securing the highest CGPA in the MTech batch of 2019, CAS IIT Delhi, 2019
4. Best innovation award, Automotive IC Engine & Development training program conducted by Automotive Industry Simulation Internship, 2014
5. Talk at the 2024 CESM Land Model / Biogeochemistry Winter Working Group Meeting on Tuesday, February 27, 2024 (online).

Conference presentations and posters:

1. **Kangari, N. R.**, Gan, W., Vidale, P. L., and Best, M.: EEO theory for photosynthesis and respiration in gridded standalone JULES for simulating better carbon fluxes, EGU General Assembly 2026, Vienna, Austria, 3–8 May 2026, EGU26-12215, <https://doi.org/10.5194/egusphere-egu26-12215>, 2026.
2. Yadav, R., **Kangari, N. R.**, (Previously Reddy, K. N.) and Baidya Roy, S.: Impact of Climate Change on Indian agroecosystems: Long-Term Trends from Site-Scale Data (1970–2020), EGU General Assembly 2025, Vienna, Austria, 27 Apr–2 May 2025, EGU25-14646, <https://doi.org/10.5194/egusphere-egu25-14646>, 2025.
3. **Kangari, N. R.**, (Previously Reddy, K. N.) and Baidya Roy, S.: Impact of climate and agricultural management practices on carbon fluxes using a CLM5 land surface model, EGU General Assembly 2024, Vienna, Austria, 14–19 Apr 2024, EGU24-1159, <https://doi.org/10.5194/egusphere-egu24-1159>, 2024.
4. **Kangari, N. R.**, (Previously Reddy, K. N.) Baidya Roy, S., Bhattacharya, B. K., and Varma, G. V.: Improving crop dynamics in the CLM5 land surface model, EGU General Assembly 2023, Vienna, Austria, 24–28 Apr 2023, EGU23-6395, <https://doi.org/10.5194/egusphere-egu23-6395>, 2023.
5. **Reddy, K. N.**, and Baidya Roy, S.: Improving the crop module in CLM5 to better represent the spring wheat grown in South Asia, AGU Fall Meeting 2022, available at: <https://agu2022fallmeeting-agu.ipostersessions.com/Default.aspx?s=FA-F6-86-6E-95-F2-4A-5D-3C-58-CB-AA-AD-6C-E9-21>, 2022.
6. **Kangari, N. R.**, (Previously Reddy, K. N.) Baidya Roy, S.: Layout optimization for a large offshore wind farm using Genetic Algorithm, EGU General Assembly 2020, Online 4-8 May 2020, EGU2020-12654, <https://doi.org/10.5194/egusphere-egu2020-12654>, 2020.