Curriculum Vitaé

Lakshman Nandagiri, Ph.D.
Professor (HAG)
Department of Water Resources and Ocean Engineering
(Formerly Department of Applied Mechanics and Hydraulics)
National Institute of Technology Karnataka, Surathkal
Srinivasnagar, Mangaluru - 575 025.

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https://www.researchgate.net/profile/Lakshman_Nandagiri
Vidwan Id: 54589 https://orcid.org/0000-0003-2380-4215 Scopus ID: 6603354214

Professional Education

- **Ph.D., Water Resources Engineering**
  Thesis title: ' *Field Soil Moisture Regimes and Hydrology of Irrigated Plots*'
  Indian Institute of Science, Bangalore, India, 1994
- **Master of Engineering, Hydraulics**
  National Institute of Engineering, University of Mysore, India, 1986
- **Bachelor of Engineering, Civil**
  S. J. College of Engineering, University of Mysore, India, 1983

Technical Areas of Specialization

Hydraulics, Fluid Mechanics, Water Resources Engineering, Surface Water Hydrology, Sub-surface Hydrology, Irrigation & Drainage Engineering, Water Resources Management

Research Interests

- Catchment/Watershed Hydrology
- Sustainable Water Resources Management
- Integrated River Basin Management
- Vadose Zone Processes/Properties
- Soil Moisture Measurement/Modelling
- Evapotranspiration
- Irrigation Scheduling
- Remote Sensing/GIS applications in Hydrology
- Multivariate Statistics, Artificial Neural Network Applications

- Land-Atmosphere Interactions
- Hydrological Impacts of Land Use & Climate Changes

Work Experience

- **12 August 2005 onwards** – Professor, Department of Water Resources & Ocean Engineering (formerly, Department of Applied Mechanics & Hydraulics), National Institute of Technology Karnataka (formerly Karnataka Regional Engineering College), Surathkal, India
- **1 April 2014 – 17 June 2016** – Professor in-Charge, Department of Training & Placement
- **1 February 2011 to January 31, 2014** – Dean (Planning & Development), NITK
- **12 March 2007 to 12 March 2010** – Head of the Department of Applied Mechanics & Hydraulics
- **12 August 1997 to 11 August 2005** – Assistant Professor, Department of Applied Mechanics & Hydraulics, Karnataka Regional Engineering College, Surathkal, India
- **12 August 1991 to 11 August 1997** – Senior Lecturer, Department of Applied Mechanics & Hydraulics, Karnataka Regional Engineering College, Surathkal, India
- **1 January 1990 to 1 May 1993 –** Research Scholar, Department of Civil Engineering, Indian Institute of Science, Bangalore, India
- **12 August 1985 to 11 August 1991 –** Lecturer, Department of Applied Mechanics & Hydraulics, Karnataka Regional Engineering College, Surathkal, India

Courses Taught

- Surface Water Hydrology (Graduate, Post-Graduate)
- Irrigation & Drainage Engineering (Graduate, Post-Graduate)
- Sustainable Water Resources Management (Post-Graduate)
- Project Planning & Management (Post-Graduate)
- Fluid Mechanics (Graduate)
- Water Conveyance Systems (Graduate)
- Hydraulic Machines & Water Power (Graduate, Post-Graduate)
- Groundwater Hydrology (Graduate, Post-Graduate)
- Open Channel Flow & Sediment Transport (Graduate, Post-Graduate)

Awards/Fellowships

- Government of India Scholarship for M.E. studies
- Government of India Scholarship for PhD studies
- British Hydrological Society Overseas Conference Fellowship (1998, 2004)
- International Association for Hydrological Sciences Conference Fellowship (2002)
- Research paper awarded Gold Medal for Best Paper in the National Seminar on Signals,

Data & System Modeling, Simulation & Analysis, 1995, Bhatkal, India

- 'Best Paper in Conference Theme', International Conference on 'Water, Environment, Energy and Society' (ICWEES 2016), held at Bhopal during March 15-19, 2016.

Professional Memberships

- Fellow, The Institution of Engineers (India)
- Life Member, Indian Society for Technical Education
- Life Member, Indian Society for Geomatics

Research & Development Activities

1. Sponsored R&D Projects

1. **2016 – 2017 'Plastic waste management system',** Technical Education Quality Improvement Program (TEQIP) (PI: Dr. Pruthvi)
2. **Proposal Pending approval** with Ministry of Water Resources, Govt of India since Jan 2013: *"Climate change impact assessment on the water resources of Cauvery basin".* Lead institution: IIT Madras. Participating institutions: IISc, **NITK**, TN Agricultural University, Anna University. Funding request: Rs. 3.92 crores (Rs. 42 lakhs for NITK)
3. **December 2006 – 2009 'Characterization of Groundwater Flow Regime in Fractured Aquifer System',** All India Council for Technical Education - Nationally Coordinated Project (NCP) Scheme (Principal Investigator: Dr. M. Sekhar, IISc, Bangalore)
4. **2004-2005 'Modernization of Remote Sensing & GIS Laboratory',** Ministry of Human Resources Development, Government of India (Co-Coordinator: Dr. Ambha Shetty)
5. **2002-2005 'Integrating Remote Sensing, GIS and Hydrological Modelling for Assessment of Rural Water Supplies',** Indian Space Research Organization (Co-Investigator: Dr. Ambha Shetty)
6. **2001-2003 'Watershed Characterization using Parallely-processed Remote Sensing Data',** Ministry of Information Technology, Government of India (Co-Investigators: Prof. MC Narasimhan, Dr. Ambha Shetty)
7. **2001-2003 'Catchment-scale Groundwater Recharge Estimation using Remote Sensing & GIS',** Ministry of Human Resources Development, Government of India
8. **1997-2000 'Studies on the development & management of water harvesting structures for lateritic soils of West Coast Region',** Indian Council for Agricultural Research (Co-Investigator: AC Mathews, CPCRI)

2. Doctoral Research Supervision

Awarded:

1. Spatial Hydrological Modelling using Remote Sensing & GIS (Dr. Amba Shetty, Feb 2006)

2. Modelling Impacts of Climate Change on Irrigated Agriculture in India (Dr. Gicy Kovoor, July 2006)
3. Planning and Management of Small-Scale Irrigation Schemes in Coastal Uttara Kannada District, Karnataka, India (Dr. Sandeep Nayak, April 2009)
4. Hydrologic Regionalization for Flood Predictions in Ungauged Basins in Krishna Basin, India (Dr. Manoj Mujumdar, June 2010)
5. Measurement and Modeling of Hydrological Responses under different Land Covers in Sahayadri Mountains, India (Dr. B. Venkatesh, July 2011)
6. Evaluation of a Satellite-based Evapotranspiration Model in a Humid Tropical Region (Dr. Keerthi Laxmi, April 2015)
7. Assessment of Variable Source Area Hydrological Models in Upper Cauvery Basin, Karnataka, India (Dr. Kumar Raju, February 2016)
8. Assessment of hydrological impacts of land cover changes and climate variability in the Geba catchment, Ethiopia (Dr. Gebremedhin Kiros Hailu, October 2016) Co-guide: Dr. Amba Shetty
9. Modeling Evapotranspiration using Remotely Sensed Spatial Contextual Information (Dr. Sanjay Shekar, June 2020)
10. Evaluation of irrigation induced hydrological changes in the Malaprabha river basin, Karnataka, India (Dr. Usha A, December 2021)
11. Spatio-temporal Modeling of Reference Crop Evapotranspiration across Karnataka State, India (Dr. Niranjan S, April 2023)
12. Regionalization of parameters of hydrological models in South Indian rivers (Dr. C Hiremath, October 2024)

Ongoing:

1. Remote sensing applications in water resources engineering (Ms. Shilpha D N)

3. Master's Students Dissertation Supervision

1. *Regional flood frequency analysis for catchments located in south India* (Pranav P V, 2025)

2. *Comparison of performances of SWAT+ and dynamic Budyko hydrological models* (Yashas D A M, 2025)
3. *Estimation of evapotranspiration using satellite-based Priestley-Taylor model over different climate zones of Karnataka State, India* (Soumya F Patil, 2025)
4. *Comparison of evapotranspiration estimates across different climates in India using MODIS-based Priestley-Taylor model* (Aswathi P, 2024)
5. *Urban flood management of NITK: a comprehensive modeling framework* (Gulshan Kumar Singh, 2024)
6. *Weather parameter trends and their net response to the climate change in Karnataka* (Sneha A, 2024)
7. *Regionalization of parameters of conceptual hydrological models* (Arunachalam A M)
8. *Rainfall runoff modelling and flood risk and hazard mapping for Sharma basin Saudi Arabia* (T Tirupathi Rao, 2023)
9. *Flood modelling and flood mitigation strategies for Manimala River basin, Kerala* (Avani S Babu, 2023)
10. *Mapping and monitoring forest cover changes in Dakshina Kannada District using Normalized Difference Vegetation Index* (P Vinay Kumar, 2023)
11. *The relationship between land surface temperature and land use/land cover in Bengaluru Urban District, Karnataka* (Shrawan Kumar, 2023)
12. *Uncertainty analysis of SWAT model applied to Banasura Sagar dam reservoir basin, Kerala* (Surya C, 2023)
13. *Mapping satellite-based actual evapotranspiration using a simplified land surface temperature vs. fraction of vegetation feature space representation* (P Naveena, 2022).
14. *Comparative evaluation of conceptual rainfall-runoff models in two tropical Indian catchments* (Mahendra A Nannaware, 2022)
15. *Local calibration and validation of Valiantaz reference crop evapotranspiration in Karnataka State, India* (G M Chandrakanth Gorur)
16. *Modeling hydrological processes in Musi river basin using SWAT model* (Lahari Ankam, 2022)
17. *Hydrological modeling using Simulink – Application to Malaprabha basin, India* (Poornima Pusa, 2021)
18. *An integrated approach to map actual evapotranspiration in the Netravathi basin using satellite imagery* (Pallavi Madagunaki, 2021)
19. *Performance evaluation of an atmospheric water potential-based model for reference crop evapotranspiration estimation in Karnataka State, India* (Devalla Kishore, 2021)
20. *Baseflow recession analysis for Nethravathi basin* (Sudardeva N, 2020)
21. *Investigation of dominant hydrological processes in a catchment through conceptual modeling with downward approach* (Sharu Tany Prasad, 2020)
22. *Implementation of satellite-based Penman-Monteith method to map actual evapotranspiration in the Netravathi river basin* (Parth Agarwal, 2020)
23. *Automated edge detection in LST-Fr plots for regional actual evapotranspiration mapping in Netravathi basin* (Vyza Chandrasekhar Reddy, 2020)
24. *Modeling actual evapotranspiration using the advection-aridity model in Karnataka State, India* (M.Tech by Research) (Ananya S G, 2019)

25. *Estimation of potential evapotranspiration using MODIS land surface temperature* (Nageshwara Rao, 2019)
26. *Spatial interpolation of climate data in Netravathi Basin* (Krishna JSR, 2019)
27. *A probabilistic approach to characterize land surface temperature variations in a tropical Indian river* (Chirag T, 2018)
28. *Evaluation of evapotranspiration suppression and its effect on irrigation demand* (Dilraj K T, 2018)
29. *Prediction of satellite-based LST using land and climatic parameters* (Shiva Shankari, 2017)
30. *Quantification of glacier volume and analysis of surface characteristics of glaciers in Chandra basin – Western Himalayas* (Vivek Sharma, 2017)
31. *Baseflow recession analysis for Netravathi basin* (Niyanth, 2017)
32. *Characterization of urban heat island and its effect on rainfall – case study of Chennai City* (Pradeep S, 2016)
33. *Identifying variable source areas in a humid tropical catchment using water spectral indices* (Destimona Borah, 2016)
34. *Modeling sediment yield in Netravathi river basin using SWAT* (Alka Abraham, 2016)
35. *Comparison of two algorithms for estimation of actual evapotranspiration using satellite data* (Jagdeesh, 2016)
36. *Performance evaluation of SWAT model in the Upper Cauvery river basin, Karnataka, India* (Anand Sagar, 2016)
37. *Calibration of modified Blaney-Criddle equation to compute reference evapotranspiration at selected locations in Karnataka state, India* (Nigee K, 2015)
38. *Hydrological modeling of Upper Cauvery river basin using the VIC model* (Shakir Shabir, 2014)
39. *Assessment of land surface temperature variability over Mangalore City using satellite data* (Rajisha C, 2014)
40. *Assessment of long-term groundwater balance components of the Thippagondanahalli reservoir catchment, Karnataka* (Shilpa D N, 2014)
41. *Evaluation of economic value of Pilikula Lake using Travel Cost and Contingent Evaluation Methods* (Jala, 2013)
42. *Simulation of climatic sensitivity of hydrologic variables in Nethravathi basin using SWAT model* (Bibin H, 2013)
43. *Modeling the hydrology of a humid river basin using SWAT* (Sanjay Sekhar, 2012)
44. *Hydrologic delineation of Krishna basin by scaling of flood frequency curves* (Abha, 2012)
45. *Application of SWAT model to a humid tropical river basin* (Mohan Kumar, 2011)
46. *Estimation of regional actual evapotranspiration in Netravathi basin using MODIS data* (Kavyashree, 2011)
47. *Prediction of flow duration curves for ungauged sites in Krishna Basin* (Nruthya, 2011)
48. *Reliability analysis of steel column* (Kedar Deo, 2011)
49. *Modeling regional actual evapotranspiration in Netravathi basin using satellite data (*Kumar Raju, 2010)
50. *Reliability analysis of steel beam* (Harsha SV, 2009)

51. *Analysis of temporal and spatial variations in rainfall in coastal Karnataka* (Shreenivas K, 2008)
52. *Modeling Pedo Transfer Functions using Neural Networks and Multivariate Statistical Methods* (P Raja Sekhar Reddy, 2006)
53. *Evaluation of Reliability based design of rubble mound breakwater* (Anil Kumar, 2005)
54. *Prediction of Flow Duration Curves in Ungauged Basins of Coastal Karnataka and Kerala* (Rajaram R, 2005)
55. *Estimation of Catchment-scale irrigation water requirements using RS/GIS* (Sangeeta T, 2004)
56. *Distributed Hydrological Modelling using RS/GIS* (Rajesh M, 2004)
57. *Regionalized Rainfall Runoff Relationships for Coastal Karnataka* (Y Rama Mohana Rao, 2003)
58. *Catchment Scale flow routing* (M Venkata Sowjanya, 2002)
59. *Irrigation Scheduling model for field crops* (K Rousseau, 2002)
60. *Discharge measurement in open channels using mobile prisms* (J Krishna, 2000)
61. *Application of SWAT model to a humid river basin* (Murali Mohan, 2000)
62. *Detection of shoreline changes and island morphology using RS* (Suresh Babu, 2000)
63. *Performance evaluation of Pedotransfer Functions across soil textures* (Vijayalatha, 1999)
64. *Study of stream-aquifer interactions in Gurpur river basin* (Hari Krishna, 1999)
65. *Estimation of unsaturated soil hydraulic properties using Artificial Neural Networks* (Somanth Kori, 1998)
66. *Water Balance of Crop Root Zone-Development and Test of a Daily Simulation model* (Ramakrishna Sarma, 1997)
67. *A Simulation study on conjunctive use of surface water and ground water for irrigation* (Shashidhara Reddy, 1996)
68. *Possible impacts of landuse and climate changes on streamflow - Simulation of the Gurpur River Basin* (M Mrinalini, 1996)
69. *Application of a monthly rainfall runoff model to river basins of D.K.District* (B M Dodamani, 1995)
70. *Location Dependent variability of rainfall in D.K.District* (Thippeswamy, 1995)
71. *A study on variability of runoff in the rivers of D.K.District* (Thimmiah, 1994)
72. *Soil plant atmosphere relationships in arecanut cocoa mixed cropping system at Vittal* (VijayaKumar, 1990)
73. *Impact of salinity on growth and yield of rice crop in D.K. soils - A case study* (Ramesh BR, 1989)
74. *Studies on infiltration from trickle source in cropped vs. uncropped sandy loam soils of Coastal Karnataka* (Girish MB, 1988)
75. *Agro climatological studies of Southern Dakshina Kannada District in relation to plantation crops* (A Mahesha, 1987)

4. Graduate Students Dissertation Supervision

1. *Analysis of water hammer in pipes using ENO scheme* (Udayaprakash Bhat, 1998)
2. *Spatial Analysis of rainfall using ANN and kriging* (Srirang, 1999)
3. *Runoff estimation using GIS* (Hemant Upadhya, Sushmita & Srikant, 2000)
4. *Rainfall forecasting using neural networks* (Harsha Bhat, Jayathri, Tomson, 2001)
5. *Estimation of streamflow from rainfall- Comparison of statistical and ANN approaches* (P Sen, R Paul, P Surendra, 2002)
6. *Estimation of irrigation water requirements using RS and GIS techniques* (BK Singh, SRD Sharma, H Rastogi, Swetha Singh, 2003)
7. *Spatial interpolation of point rainfall to a grid system* (Ann Mathew, Sarah Z, Suganya, 2003)
8. *Spatial interpolation of rainfall considering orographic effects* (Vivek Desai, Ajay Venu, 2006)
9. *Design of rooftop rainwater harvesting system for tropical regions* (Bhaskar Baruah, Tanshumon Das, 2006)
10. *Flow duration curves for coastal Karnataka* (Murali J, Sudipto M, 2007)
11. *Development of regression models for prediction of evaporation* (Radhika N, Pratibha N, Babita N, 2007)
12. *Flood Prediction Models for Ungauged Basins in Krishna Catchment* (Eshita Jha, Priya M.K, 2007)
13. *Development of fuzzy regression models for prediction of evaporation* (Naganand, Julian G, 2007)
14. *Analysis of Solar Groundwater Stills and its soil properties* (Vignesh U & Prasanna Kumar R, 2009)
15. *Computation of Mannings Roughness Coefficient by Fuzzy Logic Approach* (Nayan Jyoti & Bijit Das, 2009)
16. *Flood Frequency Analysis for Krishna Basin* (Deepak Ray, 2009)
17. *Feasibility studies for vented dam across Pavanje river* (Aslam, Sourabh, Mishra, 2010)
18. *Studies on solar Groundwater Stills* (Abhishek, Nahata, Omkar, Pavan, 2010)
19. *Baseflow separation for Netravathi river* (Swastika Singh, 2016)
20. *Trend analysis of extreme climate indices for Kaveri river basin* (Arpan Chandrashekar, Mohammed Habibullah, Rajkumar Maurya, 2016)
21. *Peak flow estimation of river Netravathi using Rational Method* (Binita Thapa, 2018)
22. *Developing regression models for predicting pan evaporation from climatic data* (Aishwarya P, Gaurav Nayak, Shreeharsha Kumar, 2018)
23. *A comparative study of tank models to simulate dominant hydrological processes* (Devika S, Manna, Vignesh, 2019)
24. *Analysis of variability of historical rainfall over Upper Cauvery Basin* (Smitha, Nehaal Nayak, 2019)
25. *Reservoir simulation for hydropower generation in Netravathi basin* (Sai Vardhan, P Anirudh, S Vamshidhar, 2020)
26. *Prediction of mean annual flood for ungauged catchments in Karnataka* (Sarthak Chaturvedi, Phian Philip, Dev Shankar, Prakhar Singh, 2020)

27. *A comparison of multiple least-squares and partial least-squares approaches of developing regression models for predicting daily evapotranspiration* (Ritu Saini, Bindiya H Shetty, Rohan Barman, Sonal Sudhakara, 2021)
28. *Trend analysis of meteorological variables of various regions in Karnataka State* (Arshdeep Singh Bansal, Gautam Patel, 2021)
29. *Estimation of reference evapotranspiration in Karnataka using artificial neural networks* (Divyansha Shree, Guruprasad Patil, Kriti Kumar, 2024)
30. *Trend analysis of climatic variables of central Karnataka region* (Aditya Sanjiv Joshi, Aman Kumar Yadav, Shri Prakash Shukla, 2024)

Industrial Consulting

1. **1991-92** *Reclamation of water-logged areas*, Hindustan Aeronautics Limited, Bangalore (Assistance to: Prof. Rama Prasad, IISc, Bangalore)
2. **1992** *Hydrological studies for Cauvery water dispute tribunal*, Government of Karnataka (Assistance to: Prof. Rama Prasad, IISc, Bangalore)
3. **1993-94** *Rainfall runoff modelling and water resources assessment for DK district,* Danish International Development Authority (DANIDA)
4. **1997** *Design of water distribution network,* Cogentrix Power Company (Co-Investigator: Prof. Rama Murthy, NITK)
5. **1998** *Surface Drainage studies,* Mangalore Refineries & Petrochemicals Limited (Co-Investigator: Prof. Rama Murthy, NITK)
6. **1998** *Failure analysis of non-return valve,* New Mangalore Port Trust, (Co-Investigator: Prof. Rama Murthy, NITK)
7. **2000** *Reclamation of water logged areas,* Mangalore Refineries & Petrochemicals Limited (Co-Investigator: Prof. SG Mayya, NITK)
8. **2005** *Design of Vented Dam across Gurpur River,* Government of Karnataka (Co-Investigator: Prof. SG Mayya, NITK)
9. **2007** *Design of surface drainage system for Chitrapur area, Mangalore,* Asha City Builders & Developers (Co-Investigator: Dr. Amba Shetty)
10. **2007** *Technical Feasibility of Baje Mini Hydel Scheme,* Corporation Bank (Co-Investigator: Prof. Uday Kumar Y)
11. **2007** *Adequacy study of existing raw water system of MRPL*, Mangalore Refinery & Petrochemicals Ltd. (Co-Investigators: Dr. A. Mahesha, Sri K. Subrahmanya)
12. **2020** *Post Flood Disaster Scenario in and around Belthangadi Taluk, Dakshina Kannada District, Karnataka* (Co-investigators: Dr. Ramesh H. and Dr. Subrahmanya Kundapura)

Publications

Refereed Papers

1. A.Mahesha & **L. Nandagiri**. Influence of Weather Variables on Coconut Yield. *Mausam*

(formerly Indian Meteorological Journal), 44(1); 102-104.1993.

2. **L.Nandagiri** & Rama Prasad. Field Evaluation of Unsaturated Hydraulic Conductivity Models and Parameter Estimation from Retention Data. *Journal of Hydrology*, (Elsevier) 179 (1-4):197-205.1996.

3. **L.Nandagiri** & Rama Prasad. Relative Performances of Textural Models in Predicting the in-Situ Soil Moisture Characteristic. *Journal of Irrigation and Drainage Engineering* (ASCE), 123(3):211- 214.1997.

4. **L.Nandagiri**, M.Thippeswamy & G.S.Somantha. Location Dependent Variability of Monsoon Rainfall in a Tropical Region. *ISH Journal of Hydraulic Engineering*, (Taylor & Francis), 3(1):1-10.1997.

5. **L.Nandagiri**, Amba Shetty & Somanth Kori. Pedo Transfer Functions- An exploration using artificial neural networks. *International Groundwater Symposium 2002*, 25-28 March 2002, Berkeley, USA.

6. **L. Nandagiri** and Jan de Leeuw. Scaling Soil Water Retention Curves using a Correlation Coefficient Maximization Approach (January 1, 2003). *Department of Statistics, Univ. of California Los Angeles. Department of Statistics Papers*. Paper 2003010103. http://repositories.cdlib.org/uclastat/papers/2003010103

7. **L. Nandagiri** & Gicy Kovoor. Sensitivity of Food and Agriculture Organization Penman-Monteith Reference Evapotranspiration estimates to alternative procedures for estimation of parameters. *Journal of Irrigation and Drainage Engineering* (ASCE) 131 (3): 238-248. 2005.

8. Amba Shetty, **L. Nandagiri**, Sangeeta T & Rajesh. Land use/Land cover mapping using satellite data for a forested watershed in Udupi District, Karnataka, India. *Journal of Indian Society for Remote Sensing*, (Springer), 33(2): 233-238. 2005.

9. **L. Nandagiri**, Bore Gowda and Amba Shetty. In-situ characterization of Unsaturated Soil Hydraulic properties of a laterite soil profile in Coastal Karnataka. *ISH Journal of Hydraulic Engineering*, (Taylor & Francis), 12(1): 87-98. 2006.

10. **L. Nandagiri** & Gicy Kovoor. Performance Evaluation of Reference Evapotranspiration Equations across a range of Indian Climates. *Journal of Irrigation and Drainage Engineering* (ASCE) 132(3): 238-249. 2006.

11. Gicy Kovoor and **L. Nandagiri**. Development of Regression Models for Predicting Pan Evaporation from Climatic Data – A Comparison of Multiple Least-squares, Principal

Components and Partial Least-squares Approaches. *Journal of Irrigation and Drainage Engineering* (ASCE) 133 (5), 444-454.2007.

12. Sandeep Nayak and **L. Nandagiri**. Characterization of small-scale groundwater irrigation schemes in a humid coastal region of southern India. *Journal of Tropical Agriculture* 47 (1-2): 37-42. 2009.

13. Sandeep Nayak and **L. Nandagiri**. Climate Analysis for Regional Irrigation Planning. *ISH Journal of Hydraulic Engineering*, (Taylor & Francis), 16(1), 57-68. 2010.

14. Venkatesh B, **L. Nandagiri** and Purandara, B.K. Analysis of Observed soil moisture patterns under different land covers in Western Ghats, India. *Journal of Hydrology*, (Elsevier), 397 (3-4), 281-294, 2010.

15. Manoj Mujumdar and **L. Nandagiri**. Regional Flood Estimation at Ungauged sites in Upper Krishna Basin, India. *International Journal of Water Resources and Environmental Management*, 1 (2), 173-190, July-Dec 2010.

16. Venkatesh B, **L. Nandagiri** and Purandara, B.K. Soil water fluxes under different land covers – a case study from Western Ghats, India. *International Journal of Earth Sciences & Engineering*, 04(02), 268-278, 2011.

17. Venkatesh B, **L. Nandagiri**, Purandara, B.K, and Reddy, V.B., Modeling soil moisture under different land covers in a sub-humid environment of Western Ghats, India. *Journal of Earth System Science*, (Springer), 120, No. 3, 387–398 June 2011.

18. J.M. Vouillamoz, A. Legchenko and **L. Nandagiri.** Characterizing aquifers when using magnetic resonance sounding in a heterogeneous geomagnetic field. *Near Surface Geophysics,* 9, 135-144, 2011.

19. J.-M. Vouillamoz, J. Hoareau, M. Grammare, D. Caron, **L. Nandagiri**, and A. Legchenko. Quantifying aquifer properties and freshwater resource in coastal barriers: a hydrogeophysical approach applied at Sasihithlu (Karnataka state, India). *Hydrol. Earth Syst. Sci*., 16, 4387–4400, 2012.

20. Manoj Mujumdar and **L. Nandagiri**. Overview of Regional Flood Frequency Analysis. *International Journal of Earth Sciences & Engineering*, 06- 5(1), October 2013.

21. Keerthi Laxmi, **L. Nandagiri.** Vegetation dynamics in a tropical river basin inferred from MODIS satellite data. *International Journal of Earth Sciences & Engineering*, 06(6), Dec. 2013.

22. Venkatesh B, **L. Nandagiri** and Purandara, B.K. Hydrological impacts of afforestation - a review of research in India. *Journal of Forestry Research*, (Springer), 25(1), 37-42, 2014.

23. Manoj Mujumdar, Thorvat A.R. and **L. Nandagiri.** Development of regional flood formulas for predictions in ungauged basins of Upper Krishna River basin, India. *International Journal of Global Initiatives,* 3(1), A78-A95, 2014.

24. Keerthi Laxmi and **L. Nandagiri**. Latent heat flux estimation using trapezoidal relationship between MODIS land surface temperature and fraction of vegetation – Application and validation in a humid tropical region. *Remote Sensing Letters*, 5(11), 982-991, 2014.

25. Kumar Raju B. C. and **L. Nandagiri**. Identification of hydrologically active areas in a watershed using satellite data. *Aquatic Procedia* (Elsevier), 4 (2015), 1339-1344, 2015.

26. Jala and **L. Nandagiri.** Evaluation of economic value of Pilikula Lake using travel cost and contingent valuation methods. *Aquatic Procedia* (Elsevier), 4 (2015), 1315-1321, 2015.

27. Venkatesh B., **L. Nandagiri** and Purandara B. K. Analysis of temporal stability of observed soil moisture under plantation forest in Western Ghats of India. *Aquatic Procedia* (Elsevier), 4 (2015), 601-608, 2015.

28. Kumar Raju B.C. and **L. Nandagiri**. Evaluating uncertainty of Soil and Water Assessment Tool (SWAT) model in the Upper Cauvery Basin, Karnataka, India. *International Journal of Earth Sciences & Engineering*, 08(4), 1675-1681. Aug. 2015.

29. Kiros G, Amba Shetty and **L. Nandagiri.** Performance Evaluation of SWAT Model for Land Use and Land Cover Changes in Semi-Arid Climatic Conditions: A Review. *Hydrology Current Research*, 6 (3), 2015, doi:10.4172/2157-7587.1000216

30. Kiros, G., Shetty, A. & **Nandagiri, L**. Analysis of variability and trends in rainfall over northern Ethiopia. *Arabian Journal of Geosciences,* (Springer) 9: 451. doi:10.1007/s12517-016-2471-1, 2016.

31. Sanjay Shekar N. C. and **L. Nandagiri**. "Actual Evapotranspiration Estimation Using a Penman-Monteith Model." *International Journal of Advances in Agricultural and Environmental Engineering (IJAAEE)*, 3 (1), (2016), ISSN 2349-1523, 161-164.

32. Kumar Raju B. C. and **Nandagiri, L.** Analysis of Historical Trends in Hydrometeorological Variables in the Upper Cauvery Basin, Karnataka, India. *Current Science,* 112(3), 577-587, February 2017.

33. Kiros, G., Shetty, A. & **Nandagiri, L.** Extreme Rainfall Signatures under Changing Climate in Semi-arid Northern Highlands of Ethiopia. *Cogent Geoscience*, (Taylor & Francis Online) 3: 1353719, 2017.

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46. Niyanth Kumar and **L. Nandagiri**, "Baseflow Recession Characteristics of a Tropical River in India", Accepted for oral presentation in *International Conference on Hydroecology (HydroEco 2017), 18-23 June 2017, University of Birmingham, UK*.

47. Niranjan S and **L. Nandagiri**, "Evaluation of evapotranspiration models in different climatic regions of India", *Proceedings of 22nd International Conference on Hydraulics, Water Resources and Coastal Engineering (HYDRO 2017)*, 21-23 December 2017, LD College of Engineering, Ahmedabad, p 418-428.

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49. Usha Aswathaiah and **L. Nandagiri**. "Identification of Rainfall trends using Singular Spectrum Analysis." *Proc., International Conference on Hydraulics, Water Resources and Coastal Engineering*, NIT Patna, 19-21 December 2018.

50. Ananya S. G. and **L. Nandagiri**, "Modeling Actual Evapotranspiration using the Advection Aridity Model", *Proceedings of Third National Conference on Emerging trends in Science and Engineering* held at SMVITM Campus in Bantakal, Udupi District, Karnataka, India during April 26 & 27, 2019.

51. Usha Aswathaiah and **L. Nandagiri**. "Reservoir and Land-Use Induced Changes in River Flow Dynamics in a Tropical River Basin in India." *Geophysical Research Abstracts,* Vol. 21, EGU2019-1658, Vienna, Austria, 2019.

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53. S Niranjan and **L Nandagiri**. "Evaluation of Solar Radiation Equations for Estimating Reference Crop Evapotranspiration in different Agro-Climatic Zones of Karnataka State, India", AGU Fall Meeting 2019, USA, 2019

Courses/Events Organized

1. Coordinator for ISTE-CEP refresher course on 'Hydrology for Engineers' for Karnataka State PWD Engineers in 1995.
2. Coordinator of AICTE-ISTE sponsored 2 week refresher course on 'Hydrological modelling for water resources assessment and management' during 8-20 Jan.2001.
3. Organizing Secretary of National Workshop on 'Downsizing Technologies for Rural and Coastal Area Development', 28-29 April 2004
4. Vice Chairman, Organizing Committee, National Conference on 'Sustainable Water Resources Management SWaRM 2010', held during January 7-9, 2010 at NITK, Surathkal.
5. Convener, Organizing Committee for NITK Golden Jubilee Celebrations (2009-10).
6. Convener, Organizing Committee for Inauguration of NITK Diamond Jubilee Celebrations (2019-20)
7. Joint Coordinator, 3rd One Day Workshop 'Prakruthi Infocus', 28 September 2019, NITK, Surathkal.
8. Conference Chair, International Conference on 'Digital Technologies and Transformation in Academic Libraries (DigiTTAL-2019)', 26-28 December, 2019, NITK, Surathkal.

Other Professional Activities

- Former Member (2020-2023), Expert Appraisal Committee (EAC), River Valley & Hydropower Projects, Ministry of Environment, Forest & Climate Change, Government of India.
- Associate Editor – ISH Journal of Hydraulic Engineering (Taylor & Francis)
- Reviewer for international journals, '*Hydrological Processes*' (Wiley), '*Agricultural Water Management*' (Elsevier), '*Hydrology Research (Nordic Hydrology)', 'Journal of Hydrology'* (Elsevier), *'Journal of Irrigation and Drainage Engineering'* (ASCE), *'Current Science'*, '*Journal of Hydrologic Engineering'* (ASCE), '*ISH Journal of Hydraulic Engineering'* (Taylor &

Francis), '*Environmental Processes'* (Springer), *'Journal of Water and Climate Change'* (IWA Publishing), *'Journal of Applied Water Engineering and Research'* (Taylor & Francis)

- Member Regional Coordination Committee of National Institute of Hydrology, Belgaum
- Member Building & Works Committee – NITK, Surathkal; IIIT, Kota (Former)
- Former Member – Senate, MNIT, Jaipur
- Visits Abroad: United States of America (1997, 2002); United Kingdom (1998, 2004); Brazil (2002); The Netherlands (2012), Australia (2016)
- Former Member Academic Council: Karunya University, Coimbatore
- Former Member Board of Studies: SJCE, Mysore; NIE, Mysore; Karunya University, Coimbatore
- Talks on 'Water Pollution-Causes and Control', 'Water Crisis' and 'Climate Change and Impacts on Water Resources' have been broadcast over All India Radio, Mangalore.
- Delivered over 100 invited lectures
- Former Member-Secretary, NITK Research Advisory Board
- Former Editor, NITK Newsletter 'Waves'

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