S. Sreekesh

Professor

Centre for Study of Regional Development,

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Educational Qualification

***Ph D** in Geography* 1994
Jawaharlal Nehru University, New Delhi, India

PG Diploma in Remote Sensing and GIS 1992
Indian Institute of Remote Sensing, Dept of Space Dehra Dun, India

M Phil in Geography 1990
Jawaharlal Nehru University, New Delhi, India

B Ed in Geography 1987
University of Kerala, Trivandrum, India

Masters in Geography 1986
University of Kerala, Trivandrum, India

Professional Experience

Jawaharlal Nehru University, New Delhi *March 2011 – Till Now*

Professor

Teaching, research guidance, and research at the Centre for the Study of Regional Development, JNU. The courses taught at JNU are climatology, climate change, and hydrology. The research interest includes climate change and its vulnerability, Sea level rise, water quality, water resources management and land cover dynamics.

Jawaharlal Nehru University, New Delhi *March 2005 – February 2011*

Associate Professor

Teaching, research guidance, and research at the Centre for the Study of Regional Development, JNU.

TERI University, New Delhi *July 2003 – February 2005*

Associate Professor and HoD, Dept of Natural Resources

Teaching and research in the field of water and land resources and was also involved in setting up TERI University.

Tata Energy Research Institute (*TERI*), New Delhi, India *July 2000 – June 2003*

Fellow and Area convener

Responsibilities were taking a lead role in defining the research agenda of the Modelling and Economic Analysis (MEA) of TERI. Initiating and executing research studies in the field of natural resources, energy, and environment. The focus of the research was on resource management, especially water resources management and land use and land cover change implications. The other responsibilities were research proposal preparation, especially in the field of environmental and resource management using geospatial techniques such as GIS and remote sensing, and its execution, which includes project coordination and report preparation. As Area Convener of Modelling and Economic

Analysis (MEA) area of the Policy Analysis Division of TERI, I also coordinated the research activities of the area.

Research Associate, TERI *July 1996 – June 2000*

Major responsibilities were the execution of the sponsored studies in the area and also provide technical support in the field of geospatial technology to other areas/divisions of TERI

KLG Systel Ltd, New Delhi, India *March 1995 – June 1996*

Manager (Technical)

I was working as a technical manager in the GIS division of this company and was providing technical support to ER Mapper, MapInfo, Geolink, and Motorola LGT 1000 differential GPS. I carried out geospatial and satellite image (digital) analysis to resolve the resource, especially water, management issues with various agencies on a turnkey basis.

Defence Terrain Research Laboratory, New Delhi, India *December 1994 – Feb 1995*

Research Associate

The DTRL, a Ministry of Defense research institute, is involved in terrain analysis, GIS database and application development for defence purposes. The database developed at DTRL had GIS and MIS components. I was involved in developing a landslide information system for the Himalayas.

Publications list

Papers in Refereed Journals

1. Kumar A, Mal S, Schickhoff U, and **Sreekesh** S. 2024. Glacial Lake Dynamics in Dibang Valley District, Arunachal Pradesh, Eastern Himalaya. Journal of Geological Society of India 100, 11, 1507-1644.
2. Roy, P., **Sreekesh, S**. 2024. Identification of potential land use for carbon stock enhancement in SOC-deficient Alfisols of the sub-humid sub-tropics. Arabian Jr Geoscience 17, 204 https://doi.org/10.1007/s12517-024-12000-8.
3. Gayen, B K., Acharya, P., Dutta D., **Sreekesh, S**. 2023. Estimation of high resolution aerosol optical depth (AOD) from Landsat and Sentinel images using SEMARA model over complex reflective surface and various aerosol regimes in South Asia. **Atmospheric Research**, 298, 107141. https://doi.org/10.1016/j.atmosres.2023.107141
4. Parveen U, **Sreekesh S**, Sarpal S. 2023. Paleo-Reconstruction of Heavy Metal Accumulation during the Holocene in Coastal Odisha, India. Geochemistry International, 2023, Vol. 61, No. 13, pp. 1426–1441.
5. Sharma D, **Sreekesh S**, Sinha B, Lunyolo L D, Aich V. 2023. Flood and drought susceptibility zonation in the mountain environment: a case study of Upper Siang district, Eastern Himalayas, India. Environmental Earth Sciences, 82:405 https://doi.org/10.1007/s12665-023-11084-x
6. Powshi V, **Sreekesh S**, Reddy G P Obi. 2023. Carbon Stock Differentials and Sequestration Potential under Different Cropping Systems in a Tropical Monsoon Region, South-West India. Eurasian Soil Science. 56, pp1034–1042 DOI: 10.1134/S1064229323600148
7. Gayen B K, Dutta D, Acharya P, **Sreekesh S**, Kulshrestha, U C, Acharya N. 2022. Exploring the effect of waterbodies coupled with other environmental parameters to model PM2.5 over Delhi-NCT in northwest India. Atmospheric Pollution Research. 13 (12) https://doi.org/10.1016/j.apr.2022.101614.

8. Sharma Krati, Raju N J, Singh N, **Sreekesh, S**. 2022. Heavy metal pollution in groundwater of urban Delhi environs: Pollution indices and health risk assessment. Urban Climate. 45. 101233. http://doi/org/10.1016/j.uclim.2022.101233.
9. Bhattacharyya S**., Sreekesh S,** King A. 2022. Characteristics of extreme rainfall in different gridded datasets over India during 1983–2015. Atmospheric Research. 267. 105930 https://doi.org/10.1016/j.atmosres.2021.105930
10. Bhattacharyya S, **Sreekesh, S**. 2021. Assessments of multiple gridded-rainfall datasets for characterizing the precipitation concentration index and its trends in India. International Journal of Climatology. 42(5), 3147–3172 DOI:10.1002/joc.7412
11. Prakash S, Sharma M C, **Sreekesh S**, Chand P, Pandey V K, Latief S U, Deswal , Manna I, Das S, Mandal S T & Bahuguna I M. 2021. Decadal terminus position changes and ice thickness measurement of Menthosa Glacier in Lahaul region of North-Western Himalaya, Geocarto International, 37(22), 6422–6441 http://doi.org/10.1080/10106049.2021.1939437
12. Acharya P, Barik G, Gayen B K, Bar S, Maiti A, Sarkar A, Ghosh S, De S K, **Sreekesh S**. 2021. Revisiting the levels of Aerosol Optical Depth in south-southeast Asia, Europe and USA amid the COVID-19 pandemic using satellite observations. Environmental Research 193 (2021) 110514. https://doi.org/10.1016/j.envres.2020.110514.
13. Rani, S and **Sreekesh, S.** 2020. Flow regime changes under future climate and land cover scenarios in the Upper Beas basin of Himalaya using SWAT model. International Journal of Environmental Studies. *78*(3), 382–397 https://doi.org/10.1080/00207233.2020.1811574
14. **Sreekesh, S**., Kaur, N., and Sreerama Naik, S. R. 2020. An OBIA and Rule Algorithm for Coastline Extraction from High- and Medium-Resolution Multispectral Remote Sensing Images. Remote Sensing in Earth Systems Sciences. 3, 24–34, https://doi.org/10.1007/s41976-020-00032-z
15. Parveen U, **Sreekesh, S.,** and Sarpal, S. 2020. Reconstruction of the Paleoenvironmental Condition Using Geochemical Proxies in the Lower Baitarani Basin, Coastal Odisha, India. Journal of Climate Change, 6(1), pp. 37-46. DOI 10.3233/JCC200005
16. Rani, S and **Sreekesh, S**. 2019. Evaluating the Responses of Streamflow under Future Climate Change Scenarios in a Western Indian Himalaya Watershed. Environmental Processes Vol.6 No.1 pp155-174.
17. **Sreekesh, S.**, Kaur, N., and Naik, S. S. R. 2019. Agricultural Drought and Soil Moisture Analysis Using Satellite Image Based Indices, Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XLII-3/W6, 507-514, https://doi.org/10.5194/isprs-archives-XLII-3-W6-507-2019.
18. Rani, S., **Sreekesh, S.,** and Krishnan, P. 2019. Effect of Climate Change on Potential Evapotranspiration in The Upper Beas Basin of The Western Indian Himalaya, Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XLII-3/W6, 51-57, https://doi.org/10.5194/isprs-archives-XLII-3-W6-51-2019
19. **Sreekesh, S.,** Naik, S S.R., and Rani, S. 2018. Effect of Sea Level Changes on the Groundwater Quality along the Coast of Ernakulam District, Kerala. *Journal of Climate Change,* Vol. 4, No. 2, pp. 51–65.
20. Acharya P., **Sreekesh, S.,** Kulshrestha, U., and Gupta, G. 2018. Characterization of emission from open-field burning of crop residue during harvesting period in north-west India. Environment Monitoring and Assessment 190: 663. doi.org/10.1007/s10661-018-6999-2
21. Powshi, V. and **Sreekesh, S.** 2017. Assessment of soil nutrients across crop and depth variations in Chulliar-Ikshumathi sub-watershed of Gayathripuzha, Kerala. *Journal of Applied Geochemistry* 19, (1)

22. **Sreekesh, S.** 2016. Rainfall variations in Lakshadweep islands. *Indian Journal of Geo-Marine Sciences.* 45(11), 1603-1609. (Accepted in December 2010)
23. Acharya P., **Sreekesh, S.,** and Kulshrestha, U., 2016. GHG and aerosol emission from fire pixel during crop residue burning under rice and wheat cropping systems in north-west India. *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, Volume XLI-B2, 753-760. https://doi.org/10.5194/isprs-archives-XLI-B2-753-2016, 2016
24. Powshi, V. and **Sreekesh, S.** 2015. Appropriateness of different spatial interpolation techniques to understand variations in soil organic carbon in Chulliyar-Ikshumathi sub-watershed of Gayathripuzha, Kerala. *Indian Cartographer,* 35, 436-432.
25. Raina, N., Khuman, Y.S.C., Rao, K.S., and **Sreekesh, S.** 2014. Comparative analysis of species distribution modeling of Daphne papyracea in Dabka watershed, Nainital District, Uttarakhand. *Journal of Environment and Earth Science*, 4 (17): 19-29
26. Acharya P and **Sreekesh, S.** 2013. Seasonal variability in aerosol optical depth over India: a spatio-temporal analysis using the MODIS aerosol product, *International Journal of Remote Sensing*, 34:13, 4832-4849
27. Raina N., Rao K. S., and **Sreekesh, S.** 2013. Species Distribution Modeling of Berberis aristata in Dabka Watershed, Uttarakhand. VEGETOS, Vol. 26 (Special) : 30-38.
28. **Sreekesh, S**. 2012 Disaster Management: Geospatial Techniques and Methods. *Yojana* Vol 56, pp37-39.
29. Krishanan, R., Bhadwal, S., Singhal, S., Javed, A., and **Sreekesh, S.** 2003. Water Woes: Examining the manifestations of water stress in Indian villages. EPW, Vol XXXVIII No 37. pp. 3879 to 3884.
30. Noronha, L., Siqueira, A., **Sreekesh**, S., Qureshy, L., and Kazi, S. 2002. Understanding ecosystem transformation: reflections from a study in a tourist destination. AMBIO Vol.31 No. 4, pp. 295-302.
31. Sinha, S. and **Sreekesh, S.** 2002. Air quality status and management options for the mining belt of Goa. Indian journal of environmental protection Vol. 22, No. 3, March 2002 PP 241-253
32. Panwar, T S., Rao, D. D. B., and **Sreekesh, S.** 1997. Ambient air quality status of various cities of India**.** Indian Journal of Environmental Protection Vol 17(11) pp. 841-845
33. **Sreekesh, S.** 1989. The date of on-set of monsoon over Kerala coast during 1901-1987, The Indian Geographical Journal. 64 (1), June.

Books

- Mendiratta, N., **Sreekesh, S.,** and Gupta A., Ed. 2016. Guidelines for BIO-GEO Database Creation and Sustainable Development Planning in Himalayas. TERI, New Delhi. ISBN 978-81-7993-581-1
- Sundaresan, J., **Sreekesh, S.**, Ramanathan, A.L., Sonnenchein, L and Boojh, R. Eds. 2013. Climate Change and Island and Coastal Vulnerability. Springer. The Netherlands. ISBN: 978-93-81891-02-5
- Sundaresan, J., **Sreekesh, S.**, Ramanathan, A.L., Sonnenchein, L and Boojh, R. Eds. 2013. Climate Change Impact on Ecosystem. Scientific Publishers (India), Jodhpur.
- Sundaresan, J., **Sreekesh, S.**, Ramanathan, A.L., Sonnenchein, L and Boojh, R. Eds. 2013. Climate Change and Environment. Scientific Publishers (India), Jodhpur. ISBN:978-81-7233-833-6

- Noronha M L, Sridhran P V, Sinha S, Sharma N, **Sreekesh S**, Kansal A. 1998. Area-wide Environmental Quality Management (AEQM) plan for the mining belt of Goa. Directorate of planning, Statistics and Evaluation. Government of Goa, Panaji.

Chapters in Books

1. Rani, S and **Sreekesh, S.** 2022. Assessment and Prediction of Land Use/Land Cover Changes of Beas Basin Using a Modeling Approach. In: Schickhoff U., Singh R., Mal S. (eds) Mountain Landscapes in Transition. Sustainable Development Goals Series. Springer, Cham. pp 471-487. https://doi.org/10.1007/978-3-030-70238-0_20
2. Parveen, U., and **Sreekesh, S.** 2019. Elemental Geochemistry of Subsurface Sediments of Lower Baitarani Basin, East Coast of India: Implications for Paleoredox Condition. In Doronzo, O. M., Schingaro, E., Armstrong-Altrin, J.S., and Zoheir, B. (Edited) Petrogenesis and Exploration of the Earth's Interior. Springer. doi.org/10.1007/978-3-030-01575-6_35 (Print ISBN: 978-3-030-01574-9)
3. Rani, S., and **Sreekesh, S**. 2018. Variability of Temperature and Rainfall in the Upper Beas Basin, Western Himalaya. In Suraj Mal, R.B. Singh, and Christian Huggel, (Edited) Climate Change, Extreme Events and Disaster Risk Reduction: Towards Sustainable Development Goals. Springer, Switzerland ISBN 978-3-319-56468-5
4. Parveen, U., and **Sreekesh, S**. 2018. Physiographic Influence on Rainfall Variability: A Case Study of Upper Ganga Basin. In Suraj Mal, R.B. Singh, and Christian Huggel, (Edited) Climate Change, Extreme Events and Disaster Risk Reduction: Towards Sustainable Development Goals. Springer, Switzerland ISBN 978-3-319-56468-5
5. Acharya, P., **Sreekesh, S.**, and Kulshrestha, Umesh. 2017. Estimation of Emission from Crop Residue Burning; Study Over North-West India During Harvesting Season. In Kulshrestha, U., (Edited) Air Pollution and Climate Change in South Asia: Issues, Impact and Initiative. Athena Academic, ISBN: 9781910390344
6. **Sreekesh, S.** and Debnath, M. 2014. Spatio-Temporal Variability of Rainfall and Temperature in Northeast India. In N. J. Raju, (Edited) Geostatistical and Geospatial Approaches for the Characterization of Natural Resources in the Environment: Challenges, Processes and Strategies. pp-505-509 Capital Publishing Company, New Delhi. ISBN:978-93-81891
7. Acharya P and **Sreekesh, S.** 2014. Characterizing and Quantifying the Effect of Aerosol Optical depth over North Indian Plain During Harvesting Season. In N. J. Raju, (Edited) Geostatistical and Geospatial Approaches for the Characterization of Natural Resources in the Environment: Challenges, Processes and Strategies. pp-232-235. Capital Publishing Company, New Delhi. ISBN:978-93-81891
8. Sandhya and **Sreekesh, S**. 2014. Canal Irrigation and Its Impact on Spatial and Temporal Variation in Groundwater Level: A case Study in Indira Gandhi Canal Project Stage I Command area. In N. J. Raju, (Edited) Geostatistical and Geospatial Approaches for the Characterization of Natural Resources in the Environment: Challenges, Processes and Strategies. pp-194-197. Capital Publishing Company, New Delhi. ISBN:978-93-81891
9. Rani, S., and **Sreekesh, S**. 2014. An Analysis of Changes in Snow Cover in the Upper Beas River Basin, Western Himalayas. In N. J. Raju, (Edited) Geostatistical and Geospatial Approaches for the Characterization of Natural Resources in the Environment: Challenges, Processes and Strategies. pp-194-197. Capital Publishing Company, New Delhi. ISBN:978-93-81891
10. Roy, A. D. and **Sreekesh, S**. 2014. Dynamics of Overland Flow Under Changing Cropping Pattern: A Spatial Modelling Approach in Penganga Sub-watershed. In N. J. Raju, (Edited) Geostatistical and Geospatial Approaches for the Characterization of Natural Resources in the

Environment: Challenges, Processes and Strategies. pp-194-197. Capital Publishing Company, New Delhi. ISBN:978-93-81891

11. **Sreekesh, S.** 2014. Generation of Geomorphometric Information Using Satellite Images for Climate Change Impact Studies. Sundaresan, J., Santosh, K.M., Déri , A., Roggema, R., Singh, R. (Edited). Geospatial Technologies and Climate Change. Geotechnologies and the Environment Series, Vol. 10. Springer, Switzerland ISBN 978-3-319-01688-7
12. **Sreekesh, S.** 2014. Pattern of rainfall distribution and trend in Srinagar and Banihal stations of Jammu and Kashmir. In Sundaresan, J.S., Gupta, Pankaj., Santosh, K.M., Boojh, R. (Edited). Climate Change and Himalayas: Natural hazards and mountain resources. Scientific Publishers (India), Jodhpur. ISBN 9788172339917
13. Ramanathan, A. L., Kumar, A., Pillai, S., **Sreekesh, S**., Kumar, K R., and Kuma, M. 2011. Hydrochemistry of Tropical Island's Aquifer, India. Proceeding of XXIV Annual Convention of Association of Hydrologists of India. Pp 20- 31.
14. **Sreekesh, S.** and Banerjee, M. 2010. Dynamics of Use and Cover Changes in East Calcutta Wetlands. In A L Ramanathan (Edited) *Scientific Strategies for protection and preservation of wetlands in India*, School of Environmental Sciences, Jawaharlal Nehru University, New Delhi
15. **Sreekesh, S**. 2009. *Taming the river: Concerns and Policies in Managing the Floods*. In Anand R et al. (Edited) Disaster Management and Sustainable Management: Emerging Issues and Concerns, pp28-45. Pentagon Press, New Delhi.
16. **Sreekesh, S.** 2009. *Socio-Economic Data Integration and Assessment of Development Status for Watershed Management.* In Mendiratta N., Sreekesh, S., and Gupta A., (Edited) *Guidelines for BIO-GEO Database Creation and Sustainable Development Planning in Himalayas*. TERI, New Delhi. ISBN 978-81-7993-581-1
17. S. K Ghosh and **Sreekesh, S.** 2009. *Base Maps*. In Mendiratta N., Sreekesh, S., and Gupta A., (Edited) *Guidelines for BIO-GEO Database Creation and Sustainable Development Planning in Himalayas*. TERI, New Delhi. ISBN 978-81-7993-581-1
18. Kinzig, A.P., W.C. Clark, O. Edenhofer, G.C. Gallopin, W. Lucht, R.B. Mitchell, P. Romero Lankao, **S. Sreekesh**, C, Tickell, and O.R. Young. 2004. Group Report: Sustainability, in: H.J. Schellnhuber, P.J. Crutzem, W.C. Clark, M. Claussen, and H. Held (Edited), Earth System Analysis for Sustainability, MIT Press, Cambridge, MA, 454 pp., 409-434, 2004. ISBN: 9780262195133
19. Krishanan R, Bhadwal S, Singhal S, A Javed and **Sreekesh, S.** 2004. Vulnerability to water-related stress: case studies in Indian villages. In The Energy and Resources Institute, (Edited) Environmental Threats, Vulnerability, and Adaptation: Case Studies from India pp:79-91 . ISBN:9788179930427
20. Javed, A, Singhal, S., **Sreekesh, S** and Bhadwal, S. 2003. Identifying Water Stressed Regions - A GIS Based District Level Analysis. In Vijay P Singh and Ram Narayan Yadava, (Edited), Watershed Management, Allied Publishers, New Delhi pp 358-374. ISBN:81-7764-545-5.
21. **Sreekesh, S.** 1999. Land cover issues: a case study in iron ore mining area of Goa. In Subrato Sinha (Edited) Regional environmental management plan: issues and approaches pp. 77-86 Tata Energy Research Institute, New Delhi.
22. Naronha M. L., Sridharan P. V., Sinha, S., **Sreekesh S.**, Sharma N., Kansal A., Banerjee S. P., and Kaul O. N. 1998. *Area wide environmental quality management (AEQM): A case study of iron ore mining in Goa.* Proceedings of Mega event: Indian mineral industry a perspective, 6-8 August, Nagpur, India pp. 315-323. Ministry of Steel and Mines and Department of Mines, Government of India

23. Kansal, A., Narula, K. K., Ravisankar, R., and **Sreekesh, S.** 1998. Water *Pollution* In R K Pachauri and P V Sridharan (Edited) *Green India 2047: Looking back to think ahead*, Chapter 9, pp: 207-243 TERI, New Delhi.
24. Banerjee, S. P., Rao, D. D. B., Girisha, G. K., and **Sreekesh, S**. 1998. Soil resources. In R K Pachauri and P V Sridharan (Edited) *Green India 2047: Looking back to think ahead*, Chapter 5, pp: 61-94, TERI, New Delhi
25. Kaul O. N., Kurian, M., Mehta, V., Mitra, K., Singh, T. P., Singh, V., and **Sreekesh, S.** 1998. Forest resources. In R K Pachauri and P V Sridharan (Edited) *Green India 2047: Looking back to think ahead*, Chapter 6, pp: 95-138 TERI, New Delhi.

Web Publication

- **Sreekesh, S** U S Vashist and Mathew Kurian. 1998. Property rights and sustainable forest management: Case study from Haryana State, North West India. http://srdis.ciesin.org/cases/india-011.html (The World Bank/WBI's CBNRM Initiative)
- Noronha, L., S. Nairy, S. Sonak, M. Abraham, and **Sreekesh, S**. 2003. A framework of indicators of potential coastal vulnerability to development. TERI Working Papers. New Delhi, India. Available at http://www.teriin.org/teri-wr/coastin/discuss.htm (accessed December 13, 2003).

Paper Presentations in conferences and publication in proceeding/abstracts

1. **Sreekesh S.** *Groundwater quality deterioration under changing sea level along South West coast of India*. In the International workshop on "Water Availability and Quality under Varying Environmental and Urban Conditions" in Heidelberg, Germany during October 22-23, 2021 Organized by Heidelberg University, Germany.
2. **Sreekesh S. "***Climate Change Implications to Different Ecosystems in India"* Plenary speaker at the International E-conference on *Geography for People, Planet, Prosperity, and Peace* 2021 organised by Department of Geography, Savitribai Phule Pune University in association with Institute of Indian Geographers, during 4-6 October 2021.
3. **Sreekesh, S**. Coping with the Pandemic. At the National Webinar on *Pandemic Resilience and Challenges in Research Scholars Community* Organized by the National Institute of Disaster Management, New Delhi on 28 April, 2021.
4. **Sreekesh, S.** Challenges and Resilience of the Schooling during the Pandemic. At the National Webinar on *Impact of Pandemic on Online Classes: Challenges and Resilience for Urban and Rural Schools*. National Webinar Organized by National Institute of Disaster Management, New Delhi on 23 April, 2021.
5. **Sreekesh, S.** Satellite Based Drought Assessment to Augment Climate Smart Agriculture. At the *International Workshop on Climate Smart Agriculture* during 23-27 October 2020, Jointly organised by the National Institute of Technology Karnataka, Surathkal; Hiroshima University, Japan and Tata Institute of Social Science, Hyderabad
6. **Sreekesh, S** 2020. Challenges in Mine Water Management. National Workshop on *Mines Water Management* Organized by National Water Mission, Department of Water Resources, River Development & Ganga Rejuvenation, Ministry of Jal Shakti, Government of India on 24 September 2020.
7. **Sreekesh, S.** *Advanced digital processing techniques for shoreline detection and extraction.* National Symposium on "*Innovations in Geospatial Technology for Sustainable Development with special emphasis on NER"*, Shillong, Meghalaya, November 20-22, 2019
8. **Sreekesh, S** 2019. *Assessment of sea level rise and water vulnerability using geospatial technology* Plenary talk at the National Seminar on *Application of Geographic Information*

System and Statistics in Natural Resource Management from 23rd to 25th January 2019, Organized by the Department of Geography, Kannur University, Payyannur, Kerala.

9. **Sreekesh S**. 2019. *Shoreline Changes and Accelerated Coastal Erosion Along Ernakulam District, Kerala* at the 30th National Conference of Indian Institute of Geomorphologists (IGI), Organized by Department of Geography, Jamia Milia Islamia, New Delhi, 3-5 October, 2018.
10. **Sreekesh S**. 2019. *Changing Pattern of Rainfall and Trend in Madhya Pradesh* at the International Symposium on "*Advances in Agrometeorology for Managing Climatic Risks of farmers*" during 11-13 February 2019, at the Convention Centre, JNU, New Delhi.
11. **Sreekesh S**. 2019. *Agricultural Drought and Soil Moisture Analysis Using Satellite Image Based Indices* at the International Workshop on "*Earth Observations on Agricultural Monitoring*" jointly organized by ISPRS (WGIII/10), GEOGLAM, and ISRS during 18-20 February 2019, at IARI, Puza, New Delhi
12. **Sreekesh S**. 2019. *Changing Sea Level and Groundwater Geochemistry of the Coastal areas of Ernakulam District, Kerala* at the XII IGU International Conference on *Climate Change, Natural Disasters, and Sustainable Development*, organized by International Geographic Union in association with Dept of Geography, Govt. PG College, Chandigarh during 22-24 February 2019.
13. **Sreekesh S**. 2017. *Coastline changes and Groundwater vulnerability in Ernakulum district, Kerala*. At the National Seminar on "Climate change and Agriculture Vulnerabilities, Livelihood adaptation and Food Security" Organized by the Centre for the Study of Regional Development, Jawaharlal Nehru University, during August 25-26, 2017, at JNU, New Delhi.
14. Rani, S., **Sreekesh S**. 2016. *Trend Detection in Daily Temperature and Rainfall to Assess the Climate Variability at Manali Station of the Upper Beas River* Basin. At the 9th International Geographical Union (IGU) Conference on Land Use Change, Climate Extremes and Disaster Risk Reduction Organised by Shaheed Bhagat Singh College, University of Delhi during March 18-20, 2016, New Delhi.
15. Roy, A. D., **Sreekesh S**. 2016. *Remote sensing based assessment of change in cropping pattern: A case study of Penganga Sub-watershed, Maharashtra*. At the 9th International Geographical Union (IGU) Conference on Land Use Change, Climate Extremes and Disaster Risk Reduction Organized by Shaheed Bhagat Singh College, University of Delhi during March 18-20, 2016, New Delhi.
16. Praveen, U., **Sreekesh S**. 2016. *Physiographic influence on rainfall variability*. At the 9th International Geographical Union (IGU) Conference on Land Use Change, Climate Extremes and Disaster Risk Reduction Organized by Shaheed Bhagat Singh College, University of Delhi during March 18-20, 2016, New Delhi.
17. Powshi V., **Sreekesh S**. 2016. *Nutrient Status and Soil Reaction across Tillage and Non-tillage Crops and Depth Variations in Chulliar- Ikshumathi. Sub Watershed of Gayathripuzha*. At the 9th International Geographical Union (IGU) Conference on Land Use Change, Climate Extremes and Disaster Risk Reduction Organized by Shaheed Bhagat Singh College, University of Delhi during March 18-20, 2016, New Delhi.
18. Powshi V., **Sreekesh S**. 2015. *Assessment of Soil Nutrients across Crop and Depth Variations in Chulliar-Ikshumathi Sub-watershed of Gayathripuzha, Kerala*. At the National Seminar on "Past and Present Geochemical Processes - Impacts on Climate Change". Organized by the Indian Society of Applied Geochemists in collaboration with JNU, New Delhi, on 22nd and 23rd December 2015.
19. Powshi V., **Sreekesh S**. 2015. *Appropriateness of Different Spatial Interpolation Techniques to Understand Variations in Soil Organic Carbon in a sub-basin of Gayathri River, Kerala* at the XXXV INCA International Congress from 15th to 17th December 2015 at CSRD, JNU.
20. **Sreekesh S**. 2015. *Potential of Soil Resources for Life Sustenance: Kaleidoscopical Perspective* at the National Seminar on "Soil: Layer of Life, Conservation and Management" organized by the Department of Geography, Sri Sankara University of Sanskrit, Kalady, Kerala during 10th -11th December 2015.

21. **Sreekesh S**. 2015. *Rainfall Variability and Trend in Uttarakhand* at the IHCAP International Workshop on Climate Change Impacts and Adaptation in Himalaya: Science and Policy Interface organized by the Department of Geography, Kumaon University, Nainital during 2 - 3 November 2015
22. **Sreekesh S**. 2015. *Temperature Variability and Incidence of Heat Waves in Telangana*. At the International conference on Geography, Culture and Society for Our Future Earth organized by International Geographical Union in association with the Faculty of Geography, Lomonosov Moscow State University during 17-21 August 2015.
23. **Sreekesh S**. 2014. *Contextualizing Bio-physical and Socio–Economic Vulnerability at Village Level: Challenges and Possibilities of Science and Technology*. Paper presented at the International Conference on "Revisiting Social Responsibility in Contexts of Crisis: Challenges and Possibilities in Sri Lanka, Faculty of Arts, University of Colombo, during 17-18 November 2014.
24. **Sreekesh S**. 2014. *Climate Change Impact on Water Resources: Adaptation and Mitigation Options*. Paper presented at the International Conference on Emerging Trends in Biotechnology (ICETB-2014) during 6-9 November 2014, organized by Jawaharlal Nehru University, New Delhi
25. **Sreekesh S**. 2014. *Rainfall Variability and Trends in Lakshadweep Islands*. Paper presented at the National Seminar on Raise Your Voice Not the Sea Level: Small Islands and Climate Change on 5th June, 2014 Organized by Indian Human Ecology Council, Jaipur.
26. **Sreekesh S**. 2014. *River Basin Level Climate Change Mitigation and Adaptation Options*". Paper presented at the workshop on Climate Change and Adaptation Strategies on 23 April, 2014, organized by Department of Earth Sciences, University of Kashmir, Srinagar
27. **Sreekesh S**. 2014. *Challenges and Transformations in Physical Geography Teaching and Research* New Delhi, 29-30th March, 2014 "Colloquium on Rethinking Geography Education and Research in India" organized by Centre for the Study of Regional Development, JNU, New Delhi.
28. **Sreekesh S**. 2013. *Flow Declines: Plausible Causes and Impacts.* Track II India- Pakistan Water Co-operation Dialogue, Dubai, UAE, 6-9 November, 2013, Organized by Atlantic Council, South Asia Centre, USA.
29. **Sreekesh S**. 2013. *Rainfall Distribution and Trend in Jammu and Kashmir*. International Conference on Climate Change and The Himalayas: Current Status and Future Perspective (ICCCH-2013), 28-31st October 2013 organized by NISCAIR, CSIR
30. **Sreekesh S**. 2013. Presented paper on "Changing Demographics and Challenges of Climate Change in Indus Basin" Bangalore, 16-17 February, 2013 in the India-Pakistan Water Dialogue Organized by Centre for Dialogue, New Delhi and Reconciliation and Jinnah Institute, Pakistan.
31. **Sreekesh S**. 2013. *Pattern of Tropical Cyclones in Bay of Bengal* at the IGU conference on Geoinformatics for Biodiversity and Climate Change, organized by M D University, Rohtak, during March 14-16, 2013.
32. Kishore, B and **Sreekesh S.** 2013 *Drought in Bhudhelkand Region* at the IGU conference on Geoinformatics for Biodiversity and Climate Change, organized by M D University, Rohtak, during March 14-16, 2013
33. **Sreekesh S.** 2013. *An Assessment of Water Quality Changes in Narmada Basin*. International Humboldt Kolleg On Management of Water, Energy and Bio-resources in Changing Climate Regime: Emerging Issues and Environmental Challenges, organized by SES, JNU, New Delhi during 8-9 February, 2013.
34. Roy, A. D., and **Sreekesh S.** 2012. *Modelling runoff response to changing land cover in Penganga Subwatershed, Maharashtra*. 2012 International SWAT conference held during July 18-20, 2012 and organized by IIT Delhi.

35. Bhuyan B., and **Sreekesh, S.** 2012. *Issues Concerning Resource Dependency and Attitude of Local People in Conservation of Wetland: A Case Study of Deepor Beel*. National Conference on "Mangrove Wetlands and Near Shore Marine Ecosystems: From Sustainability Issues to Management & Restoration" SES, JNU, New Delhi, March 5-6, 2012.
36. Banerjee, M., and **Sreekesh, S.** 2012. *Environmental Changes and Livelihood Options: A Case Study of East Kolkata Wetlands*. National Conference on "Mangrove Wetlands and Near Shore Marine Ecosystems: From Sustainability Issues to Management & Restoration" SES, JNU, New Delhi, March 5-6, 2012
37. **Sreekesh S**. 2011. *Dynamics of Land Use and Land Cover Change in Penganga Watershed in Central India*. Paper presented at the 3rd ASIAHORCs Joint Symposium on Global Change in Asia: A Perspective of Land Use Change during Oct. 25-26, 2011, Beijing, Organized jointly by Bureau of International Cooperation, National Natural Science Foundation of China, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, Department of Ecology, Peking University and Institute of Botany, Chinese Academy of Sciences
38. **Sreekesh S.** 2010. Rainfall Variation in Lakshadweep Islands. *International Workshop on Climate Change and Island Vulnerability*. Organized by NISCAIR, and JNU, New Delhi during 28-31 October, 2010 at Kadamat Island, Lakshadweep.
39. **Sreekesh S**. 2010. Distribution Pattern of Cyclones along the East Coast of India. *International Conference on Climate Change and Environment*. Organized by NISCAIR, JNU, New Delhi and CUSAT, Kochi during 24-26 October, 2010 at Cochin University of Science and Technology (CUSAT), Kochi, Kerala.
40. **Sreekesh S.** 2010. Patterns of Tropical Cyclones and its Vulnerability to East Coast of India. International Conference on "*Global Warming, Climate Change, Sustainable Development and Secular Spirituality*" during 9-11 September, 2010, Organised by Sathigiri Research Foundation in association with UNESCO and TERI New Delhi at Thiruvananthapuram.
41. **Sreekesh S.** 2010. *Constructing Socio-Economic Development Indices. A*t the "Consultation meeting on Partnership for Strengthening the Man and Biosphere Reserves Programme in India*"* during 22-23 June, 2010 organised by The Ministry of Environment and Forests, UNESCO (Biosphere Programme) Dept of Science and Technology and Kerala Forests and Wildlife Department, at Munnar, Kerala
42. **Sreekesh, S.,** Pillai J. S., Sarathbabu, M.G., and Ramanathan A. L. 2010. *Climate change and very small islands - Lakshadweep islands in the Indian Ocean*. First International Conference on Island Sustainability, 19 - 21 April 2010. Brač Island, Croatia
43. Banerjee, M., **Sreekesh, S**. 2010. *Dynamics of Use and Cover Changes in East Calcutta Wetlands*. In the national conference on *Scientific Strategies for Protection and Preservation of Wetlands in India*. Organized by School of Environmental Sciences, Jawaharlal Nehru University, New Delhi during 11th -12th January 2010. Pp.98-100
44. **Sreekesh S**, Sarathbabu, M. G. 2010, *Patterns of Rainfall Distribution over India during 1950-2005*. 2nd International Conference on Climate Change: Impacts and Responses, 08-10 July 2010, University of Queensland, Brisbane, Australia. (Abstract accepted)
45. **Sreekesh S**. Sarathbabu, M. G., and Pillai, J. S. 2009. *Implications of Sea Level Rise: A Case Study of Kavaratti Island.* Paper presented at the 31st Indian Geography Congress on Environment, Culture and Development, November 19-21, 2009 at Department of Geography, Rani Durgavati Vishwavidyalaya, Jabalpur, M. P.
46. **Sreekesh, S** and Pillai, J. S. 2009. *Assessing Groundwater Vulnerability to Sea Level Rise and Impact on Livelihood: A Case Study of Lakshasdweep Islands*, Indian Ocean. Presented at MOCA-09, the IAMAS-IAPSO-IACS 2009 Joint Assembly, held at Montréal, Canada from July 19 – 29, 2009.
47. Pillai, J. S., Ramanathan, A. L., **Sreekesh, S.,** Khan, M.A.A., Chand, P. 2009. *Climate change on ocean, coastal ecosystem and small islands - a developmental approach*. at the International conference on February, 2009.

48. **Sreekesh, S.** 2008. *Water Potential and demand in Penganga sub-basin* at the National Symposium on Water Resources in India: Concerns, Conservation and Management (WRIIN2008), organized by the University of Kashmir, Srinagar, Kashmir, during 1-3 November, 2008.
49. **Sreekesh, S.** 2007. *Solar and Wind Resources Development Potential: Geospatial Analysis for Sri Lanka*. at the National Conference on GIS (Globe 2007) organized by IEEE Kerala Section during 26-27th October, 2007 at Institution of Engineers Hall, Thiruvananthapuram.
50. **Sreekesh, S.** 2007. *Solar and Wind Energy Resources Assessment: Geospatial toolkit*. At the training on assessment of solar and wind energy resources organized by Alternative Energy Promotion Centre, Government of Nepal and UNDP/GEF during September 26-28, 2007.
51. **Sreekesh, S.** 2005. *Solar and Wind Energy Resources Assessment: Geospatial toolkit.* Organized by UNDP/GEF at Colombo, Sri Lanka, on March 16, 2005
52. **Sreekesh, S**. and Akram Javed 2000 Assessment of Land use/ land cover changes in Sirsa Sub-watershed in Haryana In proceedings of the annual conference of Indian Society of Remote Sensing held in Khargpur, India
53. **Sreekesh, S.** 1999 *Impact of open cast mining on land: application of remote sensing and GIS technique*. In Proceedings of National Symposium on Remote Sensing for Natural Resources: Retrospective & Perspective. Organised by Indian Society of Remote Sensing. 19-21 January 1999. Bangalore, India
54. Sivasami, K. S., and **S Sreekesh** 1989 *Hydrological characteristics of Chalakudy river*. Paper presented at the 10th annual conference of the Institute of Indian Geographers at University of Delhi, Delhi, on 17- 19 Februry 1989.

Invited Lectures Delivered

1. Invited lecture on *"Interlinking of Rivers*" in "UGC- Malaviya Mission Teachers Training Centre and Department of Geography, Kurukshetra University, on 22 January 2024.
2. Key note speaker on "Geographical Perspective on Climate Change" at "National Seminar & 2nd GSHP Annual Meet on Geography and Climate Change: Issues and Challenges in the 21st Century, on 20-21 November 2023.
3. Invited lecture on "*Assessing Coastline Changes Consequent to Sea Level Rise*" 5th Refresher Course in Geography through online mode organized by HRDC-JNU: July 20, 2023.
4. Invited lecture on "*Communicating About Climate Change*" at the Centre for Investigative Journalism, 23 June 2023, New Delhi
5. Invited lecture on "*Kaleidoscope of the Environment through Geoinformatics*" at the Discovering The World Through GIS on GIS day 2022 organised by SES, JNU on 16th November 2022.
6. Invited lecture on "*Understanding Development and Pollution Linkages: Case Studies"* Refresher Course on Geography and Development Studies organised by Doctor Harisingh Gour Vishwavidyalaya, Sagar on 18th November 2022
7. Invited lecture on "*Datasets for Climate Research*" in the 6th Refresher Course in Environmental Studies on 24th August 2022, at the UGC-HRDC, JNU.
8. Invited lecture on "*Water Quality Parameters for Determining Saltwater Intrusion Along Coastal Areas"* in the 4th Refresher Course in Geography on 14th July 2022, at the UGC-HRDC, JNU. New Delhi
9. Invited lecture on "*Heat Waves: Conditions, Causes, and Impacts*" at the workshop on Heat Waves: Science and Coping Strategies by the Department of Geography, Indraprastha College for Women, Delhi University on 12 May 2022
10. Invited lecture on "*Sea Level Rise and Coastal Ecosystem Sustainability Under Changing Climate*" in the Faculty Development Program at Miranda House 4-8 April 2022.

11. Invited lecture on "*Coastal Erosion and Accretion: Assessment through Geospatial Techniques*" on 28th January 2022 Organised by the Department of Geography, Kalindi College, University of Delhi.
12. Invited lecture on "*Sea Level Rise and Coastline Change: Techniques"* Refresher Course on Geography and Earth Sciences, Organised by Doctor Harisingh Gaur Vishwavidyalaya, on 17 January 2022
13. Invited lecture on "*Climatological Research Perspectives in India*" in the 3rd Refresher Course in Geography on 21st October 2021, at the UGC-HRDC, JNU. New Delhi
14. Invited lecture on "*Coastal Vulnerability in a Changing Climate*" in the 5th Refresher Course in Environmental Studies on 23rd September 2021, at the UGC-HRDC, JNU.
15. Invited lecture at the Refresher Course on Mathematics on "*Mathematics of Geospatial Analysis and Modelling"* organized by UGC-Human Resource Development Centre, Miranda House, University of Delhi, on 22 March 2021
16. Invited lecture at the Refresher Course on Earth Science, on "*Indian Ocean Dipole and Monsoon"* organized by UGC-Human Resource Development Centre, Kannur University, Kerala on 9 March 2021.
17. Invited lecture at the Refresher Course on Environmental Challenges: Natural Resources and Livelihood Sustainability on "*Sea Level Rise and Impact on Coasts"* organized by the Department of Geography & UGC-Human Resource Development Centre, Kurukshetra University, Kurukshetra on 3 March 2021.
18. Presented in the Webinar on "*Interlinking of Rivers: Problems and Prospects"* organized by the Department of Geography, Government Arts and Science College, Nilambur, Kerala, on 26 November 2020.
19. Invited lecture in webinar series, Chapter- I on "*Monsoon: Role of Indian Ocean Dipole and OLR"* organized by Department of Geography, Kannur University, Kerala on 19 November 2020
20. Special Lecture on "*Coastal Vulnerability in a Changing Climate*" in the 4th Refresher Course in Environmental Studies on 8th September 2020, at the UGC-HRDC, JNU.
21. Special Lecture on *Sea level rise and its implications* in the 1st Refresher Course in Geography on 17th September 2019. at the UGC-HRDC, JNU
22. Invited talk on *"Consequences of Accelerated Sea Level Rise Along the coasts of Kerala"* at the National Conference on *Environmental Pollution: Impact Assessment, Remediation and Mitigation (NCEPIARM-2019), organized by School of Environment Sciences, JNU, New Delhi on March 7, 2019.*
23. Lead speaker on the theme "*Coastal Processes and Vulnerabilities*" at the Panel discussion on "*Climate Change Impact on Ocean and Coastal Vulnerability: Current Status and Way Forward*" being organized by the Department of Science and Technology on 13th November 2018 at the Convention Centre, JNU, New Delhi.
24. Delivered Keynote speech on **"***Anthropogenic Climate Change and its implications*" at the National Workshop on Rethinking about Climate Change: A Psychological Perspective Organized by Faculty Development Centre, Banasthali Vidyapith, Rajasthan, on 16th December 2017.
25. Invited lecture on *Interlinking of Rivers: Environment and Development Dynamics***.** At the Annual Geography Festival "Globe 2018" Organized by the Department of Geography, Miranda House, University of Delhi
26. Invited lecture on *Soil Water Loss and Movement: Evaporation and Infiltration*. On 15th December 2016 at the Geoscience Workshop 2016 from 14th to 23rd December 2016 sponsored by SERB, Department of Science and Technology and organized by Department of Geography and Environment Management, Vidyasagar University, Midnapore, West Bengal.

27. Invited lecture on *Climate Risk and Vulnerability Assessment*. On 7th September 2016, at the 1st Interdisciplinary Course in Environmental Studies from 29th August to 23rd September 2016, organized by the UGC-HRDC, JNU
28. Invited lecture on *Watershed Management: Issues and Approaches*. At the Indo-African Training Programme on Natural Resources and Water Management, 2-22 December 2014, Organized by the Ministry of External Affairs in collaboration with SES, JNU on 10 December 2014.
29. Invited lecture on *Adaptation and Mitigation Options to Water Resources Sector in the Context of Climate Change Impact* at the Department of Geography, Faculty of Sciences, University of Colombo, Sri Lanka on 18th November 2014.
30. Invited lecture on *Impacts of Climate Change on Water Resources*. On 9th July 2014 at the 17th Refresher Course in Geography & Environmental Studies on Population, Environment and Development organized by the UGC-Academic Staff College, Jamia Millia Islamia, New Delhi during 2- 22 July, 2014.
31. Invited lecture on *Technological Challenges for Rural Growth.* In the Training Programme on Science and Technology for Rural Societies" from 18 – 29 November 2013 organized by Lal Bahadur Shastri National Academy of Administration (LBSNAA), *Mussoorie*, UK, on 19th November, 2013.
32. Invited lecture on *Climate Change* at the Refresher course in Economics organized by Academic Staff College, JNU on 19th August 2013.
33. Invited lecture on *Climate Change Vulnerability Assessment* at the Refresher course in Environmental Science organized by Academic Staff College, JNU on 19 March 2013.
34. Invited lecture on *Generation of Morphometric Information using Satellite Images* on 17th March 2012 at the one-week training programme on Climate Change and Geospatial technology during 12-18 March 2012 Organized by NISCAIR, CSIR, New Delhi.
35. Invited lecture on *Use of DEM for Geomorphic studies* at the Refresher course in Environmental Science organized by Academic Staff College, JNU on 6 March 2013.
36. Invited lecture on *Spatial Interpolation Techniques* at the training programme on Hydrogeochemical Modelling, Assessment, and Management of Urban and Coastal Groundwater on 22nd October 2011, Organized by School of Environmental Sciences, JNU, New Delhi during 17-22 October, 2011.
37. Invited lecture on *Key Consideration for Integrating Climate Risk Reduction Strategies into Development Programmes*. on 21st October 2011 at the one-week (October 17-21, 2011) training course on "Climate Change & Disaster Management" Sponsored by DOPT, Govt. of India, and organized by Haryana Institute of Public Administration.
38. Invited lecture on *Land Degradation: Issues and Policy Implications* at the 39th Refresher course in Economics organized by Academic Staff College, JNU on 17th August 2009.
39. Invited lecture on *Compositional Changes of the Atmosphere and Climate Change*, Department of Geography, Government College, Kariavattom. Trivandrum on 25th June 2009.
40. Invited lecture on Flood in India: Causes and Concerns at the training programme on Flood Risk Mitigation and Management Organized by the National Institute of Disaster Management, Ministry of Home Affairs, New Delhi.

Research Works

Centre for the Study of Regional Development, Jawaharlal Nehru University, New Delhi

1. Achieving Carbon Neutrality and Enhancing Farm Livelihood through Sustainable Agricultural Practices in Selected Agroclimatic Zones of India (In collaboration with Visva Bharati & Manipur University (2024-25).

2. Determining the ages of petroglyphs environment. Project supported by Department of Science and Technology, Ministry of Science and Technology, Government of India (2023-2026).
3. Assessment of SLR Induced Salt Water Intrusion and Consequent Coastal Vulnerability along the west coast of India". Project supported by Department of Science and Technology, Ministry of Science and Technology, Government of India (2017-2021).
4. Groundwater Quality Changes and Livelihood Vulnerability in Coastal Ecosystems" funded by UPE-II, JNU.
5. Developing Methods for Assessing Island Vulnerability to Sea Level Rise and its Effect on Livelihood Options" Indo-Sri Lanka Collaborative project supported by the Department of Science and Technology, Ministry of Science and Technology, Government of India (Completed 2017)
6. Scoping study for S&T Interventions for improving livelihood options and income in selected village cluster in Mewat region. Study supported by Department of Science and Technology, Ministry of Science and Technology, Government of India (Completed in 2014)
7. Development of Socio-Economic Profile for Integrated Development and Ecological modelling of Selected Micro Watersheds in Uttaranchal. Project supported by Natural Resources Database Management System, Department of Science and Technology, Ministry of Science and Technology, Government of India (Completed in 2010)

The Energy and Resources Institute (TERI), New Delhi

1. National Environmental Policy for India

   Worked as a team member at TERI for the preparation of draft national environmental policy of India. My specific task was to identify problems and issues faced by water and land resources and suggest corrective policy prescriptions and integrate to the national environmental policy in line with policies of other sectors. This study was supported by Ministry of Environment and Forests, Government of India.
2. *Solar and Wind resources assessment*

   Carried solar and wind resources assessment of 15 countries around the world. The assessment considered country-level constraints of land availability due to various environmental regulations. The assessment was funded by UNEP, Nairobi.
3. *Agenda 21: Status Report from India*

   As part of the reporting on the sustainable development status of the country (India's experience in implementing agenda 21 by MoEF, I prepared a national position paper on the status of water and land resources of India. Reviewed the policy changes and programs implemented in India for sustainable development of water and land resources since the Rio Summit in 1992. The report also discussed how India addressed the major concerns of Agenda 21. This study was supported by the Ministry of Environment and Forests, Government of India.
4. *Area-Wide Environmental Quality Management Plan for Iron Ore Mining Belt of Goa State*.

   Analyzed the resource condition and socio-economic interaction between different stakeholders in the iron ore mining areas of Goa. The land use and land cover changes in and around the mining areas were assessed through remote sensing techniques. The status of water and land resources was assessed and changes in groundwater were monitored. Integrated air, water (quantity and quality), land cover change, and socio-economic

information in the spatial domain were developed to identify the impacted villages of the iron ore mining areas for preparation of the management plan.

5. *Environmental/Social Performance Indicators and Sustainability Markers In Mineral Development: Reporting Progress Towards Improved Ecosystem Health And Human Well Being*

   The project was funded by IDRC, Canada. The study focused on assessing the environmental and social performance of iron ore mining companies in Goa and developing sustainability markers for mineral development. My responsibility includes the development of framework and indicators from company, community, and government perspectives for water and land quality assessment in mining areas.

6. *Mineral Foundation*

   Involved in developing terms of reference for the Goa mining and mineral development foundation, set up by the mining companies, for the environmental management of mining areas of Goa by the mining companies.

7. *Environment Status of Korba Mining Area*

   The project assessed the environment status of the mining region of Korba by monitoring the air and water quality over two years. The study assessed changes in the environment during different seasons of the year and suggested management options without hampering the mining activities as well as the health of the people residing in the vicinity.

8. *Environmental Management of Utkal Mines of Orissa*

   Team member in preparing the environment management plan for the Utkal mines of Orissa. A management plan was prepared for a 10 km radius around the Utkal mine.

9. *Impact of Population Growth on Quality of Life*

   The project examined whether population growth had affected water availability, especially drinking water, and thus the quality of life in India. The study identified water stress regions in terms of per capita availability and suggested policy options to improve water availability across different stress zones. The project was funded by United Nations Fund for Population Activities, New Delhi.

10. *Measuring, Monitoring and Managing Sustainability: The Coastal Dimension*

    The study identified the drivers of socio-economic and environmental change in the selected coastal regions. It focused on the impact of mining and tourism activities on land use and cover changes in Goa. In the multidisciplinary study, my responsibilities include digital interpretation of satellite images for land use and land cover change analysis, preparation of GIS database and development of GIS-based decision support systems (DSS) for coastal zone management in close coordination with ICC, Barcelona. European Commission DG XII funded this study.

11. *Population, Consumption and Environment: A Tourist Spot Scenario*.

    The project was funded by the MacArthur Foundation, USA. The project examined the population-consumption-environment interaction in coastal tourism and mining area. The project assessed the changes in population composition, resource consumption pattern and environment due to the economic activities. The land cover changes and the land resource condition in coastal areas with different degrees of mining and tourism were analyzed in conjunction with the socio-economic information collected through questionnaire survey. The linkages were assessed to suggest the sustainable management option for these areas.

12. Integrated Natural Resources Management for Padavedu Sub-Watershed.

    Prepared an integrated natural resources management for Padavedu sub-watershed in Tamil Nadu. The sub-watershed was subject to different kinds of degradation due to different activities. Using geomatic techniques (satellite images and GIS), soil erosion potential in the watershed was predicted. It was integrated with various resource statuses assessed from satellite images and secondary data to determine the general condition of the watershed and identify the area of resource degradation. An integrated intervention

plan for sustainable resource management was prepared. The project is supported by TVS, Chennai.

13. *Regional Air Pollution in Developing Countries (RAPIDC): Case study for Hyderabad city*

    An emission inventory for the city of Hyderabad using surrogate data sources such as satellite images and economic activities. The study modified the emission inventory model developed for Sweden (by IVL) to suit Indian conditions. The study also evaluated non-traditional top-down methods of making air emission inventories for developing country cities. The study was funded by Swedish International Development Cooperation Agency (SIDA) through Swedish Environmental Research Institute (IVL), Stockholm.

14. *Pilot Project on Natural Resource Accounting in Goa*

    Central statistical organization, the Government of India funded this project. My responsibility was to account the physical changes in land use and land productivity in the state of Goa.

15. *GREEN INDIA- 2047(Growth with Resource Enhancement of Environment and Nature).*

    This project examined India's environmental status after its independence and the possible environmental scenario in 2050 at the present rate of environmental degradation. Involved as a GIS analyst for forest, soil and water resources status assessment and identified the stressed zones using spatial analysis techniques.

16. *The Impacts and Costs of Air Pollutants on Crop Yield in Developing Countries.*

    Involved in GIS analysis to determine the air quality of the status of major cities of India. Project report submitted to Imperial College, London.

17. *Land Degradation in Periyar River Basin*

    A thesis submitted to the School of Social Science, Jawaharlal Nehru University, New Delhi for the award of Ph.D. Degree. Identified and demarcated the different types of land degradation under different catchment characteristics using remote sensing data (aerial photos and satellite imageries–both visual and digital) and analyzed the reasons, including historical, for degradation and suggested remedies. The study also evaluated the usability of different remote sensing data products for land degradation studies in humid tropical regions.

18. *Applied Geoscientific Studies Around the Proposed Kishau Dam Site Across Tons River (U.P./H.P.): Based on remote sensing and GIS technique with limited field checks*

    This study report was submitted to the Indian Institute of Remote Sensing, National Remote Sensing Agency, Department of Space, Government of India, in partial fulfilment of P.G. Diploma in Remote Sensing (Combined report along with P.C. Jhadav). Studied and mapped the geomorphology, geology and land cover using remote sensing data (aerial photos and satellite imageries) and topographical data. Derived information was integrated in GIS domain to demarcate the hazardous areas in the catchment of the proposed Kishau Dam.

19. *Hydrological characteristics of Periyar Basin*

    Dissertation submitted to School of Social Science, Jawaharlal Nehru University in partial fulfillment of the requirements for the award of M. Phil degree. Analyzed the rainfall-runoff characteristics for the Periyar river basin and its sub-catchments.

Consultancy Projects

Evaluation Study of Farakka Barrage Project. Department of Water Resources, River Development & Ganga Rejuvenation (RD & GR), Ministry of Jal Shakti, Government of India, 2021 (collaboration with School of Environmental Sciences, JNU and IIT Delhi).

Evaluation Study of Dam Rehabilitation and Improvement Project (DRIP). Department of Water Resources, River Development & Ganga Rejuvenation (RD & GR), Ministry of Jal

Shakti, Government of India (collaboration with School of Environmental Sciences, JNU and IIT Delhi).

Evaluation Study of Ground Water Management & Regulation (GWM&R) Scheme. Department of Water Resources, River Development & Ganga Rejuvenation (RD & GR), Ministry of Jal Shakti, Government of India (collaboration with School of Environmental Sciences, JNU and IIT Delhi).

Evaluation Study of R&D Schemes of Central Water Commission (CWC), National Institute of Hydrology (NIH), Central Soil and Material Research Station (CSMRS) and Central Water and Power Research Station (CWPRS) during 2017-2020. Department of Water Resources, River Development & Ganga Rejuvenation (RD & GR), Ministry of Jal Shakti, Government of India (collaboration with School of Environmental Sciences, JNU and IIT Delhi).

Other Academic Activities

Courses Taught Currently

M. Phil/ Ph D	RD 605 Regional Hydrology
M.A	RD407 Climatology and Climate of India
	RD501 Hydrology
	RD539 Climate Change: Causes and Impacts

Courses Developed

Climatology and Climate of India (3 Credit) CSRD, JNU

Hydrology (3 Credit) CSRD, JNU

Climate Change: Causes and Impacts (4 Credit) CSRD, JNU

Introduction to Geosciences (4 Credit) TERI SAS

Basics of watershed management (4 Credit) TERI SAS

Courses Taught Earlier

Climatology and Biogeography with special reference to India (JNU)

Hydrology and Oceanography (JNU)

Introduction to Geosciences (4 Credit, at TERI SAS)

Basics of watershed management (4 Credit, at TERI SAS)

Visiting Faculty Positions

- School of Planning and Architecture:
  Offered a course on Climate Change and Its Impacts to the II Semester students of the Department of Regional Planning.
- TERI School of Advanced Studies, Vasant Kunj, New Delhi

Editorial Positions

- Associate Editor, Coastin newsletter
- Associate Editor, Journal of Resources, Energy and Development

Ph D Awarded under my supervision (8 No)

1. Impact of Soil Erosion on Soil Carbon: A Case Study of Irga Watershed, Jharkhand Poushali Roy. 2022
2. Groundwater and Soil Quality in Indira Gandhi Canal Project Command Area. Sandhya. 2021
3. Reconstructing palaeoclimate of lower Baitarani basin, Odisha. Uzma Parveen. 2020
4. Soil Quality Assessment and Carbon Sequestration Potential under different crop cover in Chulliyar-Ikshumathi sub watershed of Bharathapuzha Basin, Kerala. Powshi V 2018
5. Effect of climate and land cover changes on flow regime in the Beas river basin. Seema Rani. 2017
6. Weather response to crop residue burning in northwest India. Prasenjit Acharya. 2016.
7. Dynamics of land cover and hydrological structure on the river discharges of Penganga Subwatershed, Maharashtra Abira Dutta Roy. 2012.
8. Spatial and temporal patterns of land use/ cover change in Dabka watershed, Uttarakhand. Nancy Raina. 2011. Co-Supervisor.

M Phil Awarded under my supervision (20 No)

1. Extreme Weather Events in Chamoli District of Uttarakhand: Identifying vulnerabilities and adaptation options. (Supriya Upadhyay) 2023.
2. Evaluation of gauge-based, satellite, and reanalysis rainfall datasets in capturing extreme rainfall and precipitation concentration index over India. (Suman Bhattacharyya) 2021
3. Distinctiveness of rainfall variables in the Agartala- Guwahati transect (Rajashree Bohra). 2018.
4. Variability and time series trend analysis of rainfall and rainy days in Sambhar Lake Basin, Rajasthan (Pooja Yadav) 2018.
5. Channel morphology of the Saptamukhi river system of Indian Sundarbans (Supriti Bose). 2016.
6. An assessment of vulnerability to climate change and variability: A case study of Himachal Pradesh (Poonam Vishwas). 2016.
7. Assessment of the influence of climate variability on the snow cover area of the upper Beas river basin (Seema Rani) 2014.
8. Variability and trends of rainfall, rainy days and heaviest rainfall events in Ganga basin (Uzma Parveen) 2014.
9. Introduction of canal to drylands and its impact on land and water resources: A case study in Indira Gandhi Canal Project Stage I command area (Sandhya) 2013.
10. An assessment of air quality, weather parameters and land cover changes: A case study of Delhi. (Mina Babazadeh). 2013
11. An analysis of rain spell characteristics: A case study of Bharatpuzha River basin (Powshi V) 2013
12. Occurrence of pattern of drought in Bundelkhand region of Madhya Pradesh (Brij Kishore) 2012
13. Changing groundwater regime in Rohilkhand region (Western Uttar Pradesh) (Aishwarya) 2012
14. Seasonal variation of aerosol optical depth and its effect on surface radiating force over India. (Prasenjit Acharya) 2011.
15. Spatial analysis of Temperature changes and trends in Iran (Nahid Arabi) 2009
16. Environmental Changes in East Kolkata wetlands (Munmun Banerjee) 2009

17. Water balance and crop water requirement of Samastipur, (Bihar) (Tathir Ahmad Uzmani) 2009.
18. Soil erosion assessment in Gej watershed, Chattisgarh (Poushali Roy) 2008.
19. Environmental change and extend of dependency on wetlands: A case study of Deepor Beel, Assam (Bibek Bhuyan) 2008.
20. Rainfall- Runoff analysis: A case study of Penganga Subwatershed (Abira Dutta Roy) 2007.

Conferences Organized

1. Organized Workshop on **Flood Modelling: Real time Forecasting, Warning and Dissemination** in association with The Academy by DHI at JNU, New Delhi on 12th October 2023
2. Organized International Symposium on **"Advances in Agrometeorology for Managing Climatic Risks of Farmers"- INAGMET 2019** in association with Association of Agrometeorologists and India Meteorological Department, New Delhi during 11-13 February, 2019 at Convention Centre, Jawaharlal Nehru University, New Delhi.
3. **Convener,** National Seminar on "**Climate change and Agriculture Vulnerabilities, Livelihood adaptation and Food Security**" Organized by the Centre for the Study of Regional Development, Jawaharlal Nehru University, during August 25-26, 2017, at JNU, New Delhi.
4. **Organizing Secretary**, International Workshop on **"Climate Change and Island Vulnerability"** during 26-28 September, 2010. Organized by National Institute of Science Communication and Information Resources (NISCAIR), and Jawaharlal Nehru University New Delhi at Kadmat, Union Territory of Lakshadweep, Cochin University of Science and Technology (CUSAT), Kochi, Kerala.
5. **Organizing Secretary**, International Conference on **"Climate Change and Environment"** during 22-24 September 2010. Organized by the National Institute of Science Communication and Information Resources (NISCAIR) and Jawaharlal Nehru University at Cochin University of Science and Technology (CUSAT), Kochi, Kerala.
6. **Convener,** National Seminar on "**Contemporary Issues in Regional Development".** Organised by the Centre for the Study of Regional Development, Jawaharlal Nehru University, during 30th – 31st March 2006, at JNU, New Delhi. (Supported by the Ministry of Science & Technology, Govt of India and Indian Council of Social Science Research).
7. **Coordinator,** Expert Group meeting of the Bio-Geo Database and Ecological Modelling for Himalayas Programme at the Study of Regional Development, Jawaharlal Nehru University, during 9th – 10th November 2005, at JNU, New Delhi

Awards/Honors/Fellowships National

- Qualified Council of Scientific and Industrial Research (CSIR) National Eligibility Test (JRF/SRF) 1990
- Qualified Agricultural Scientific Recruitment Board (ASRB), National Eligibility Test (NET)
- Recipient of World Bank fellowship for training in GIS at ESRI, California, USA
- Recipient of UNIDO fellowship for GIS training by ICS, Italy.

Honorary Membership of Academic Institutions

Life Member, Indian Society of Remote Sensing

Life Member, National Association of Geographers of India

Life Member, Indian National Cartographic Association

Life Member, Association of Agrometeorologists.
Life Member, Institute of Indian Geographers

Membership of Boards/Committees (Outside JNU)

- **Member,** Academic Council,
- **Member**, National Expert Committee, Climate Change Programme under the Climate, Energy and Sustainable Technology (CEST) Division, (For National Missions on Climate Change -NMSKCC & NMSHE) DST, Ministry of Science and Technology, Government of India (Since 2024).
- **Member,** Scientific Advisory Committee, SHRI programme, Department of Science Technology, Ministry of Science and Technology, Government of India. (Since 2021)
- **Member**, Expert Committee, Climate Change Programme (For National Missions on Climate Change -NMSKCC & NMSHE) DST, Ministry of Science and Technology. Government of India (2022-24).
- **Member**, Programme Advisory Group, Device Development Programme, Department of Science Technology, Ministry of Science and Technology, Government of India. (2021-2023)
- **Member**, Programme Review & Monitoring Advisory Committee (PRMAC) on Science Channel Programme, NCSTC Division, Department of Science Technology, Ministry of Science and Technology, Government of India. (September 2019-2021)
- **Member** Programme Review & Monitoring Advisory Committee (PRMAC) on Science Channel Programme, NCSTC Division, Department of Science Technology, Ministry of Science and Technology, Government of India. (Since September 2019)
- **Coordinator,** Project Monitoring Committee, National Network Programme on Climate Change and Coastal Vulnerability (NNP-CC&CV), Climate Change Programme, Department of Science Technology, Ministry of Science and Technology, Government of India. (June 2018-2021)
- **Member**, Expert Advisory Group, Climate Change Programme, SPLICE, Department of Science Technology, Ministry of Science Technology, Government of India, New Delhi. (June 2016-2020)
- **Member,** Reviewer's Panel**,** Climate Change Programme, SPLICE, Department of Science Technology, Ministry of Science Technology, Government of India, New Delhi. (June 2017-2020).
- **Member**, (**UGC nominee**), Governing Council, Sahyadri Science College (Autonomous), Shimoga (2013-2018).
- **Evaluator,** Evaluation Committee, Earth Sciences, Council of Scientific and Industrial Research (CSIR), National Eligibility Test (JRF/SRF) during 2006-2011.
- **Member**, Technical Advisory Committee, National Institute of Hydrology, Ministry of Water Resources (from July 2000 to June 2003).
- **Expert**, Scientific Advisory Committee, Environmental Information System (ENVIS), Ministry of Environment and Forest during 2002-2005.

- **Member**, Experts' sub-group on Bio-Geo Database and Ecological Modelling for Himalayas Programme, Natural Resources Data Management System, Ministry of Science Technology, Government of India, New Delhi. March 2004-March 2006.
- **Member,** Academic Council, TERI School of Advanced Studies, from March 2004 to February 2005.
- **Member,** Board of Studies, Department of Natural Resources, TERI School of Advanced Studies, from March 2003 to February 2005.
- **Member,** Master Program Executive Committee, TERI School of Advanced Studies, from March 2003 to February 2005.
- **Secretary,** Board of Studies, Centre of Regulatory and Policy Research, TERI School of Advanced Studies, (during the academic year 2001-02; 2002-03).
- **Member,** Centre Research Committee, Centre of Regulatory and Policy Research, TERI School of Advanced Studies (from 2001-2002).
- **Member**, Project Monitoring Committee, Natural Resources Database Management System, Department of Science Technology, Ministry of Science and Technology, Government of India. (During 2003-2008)
- **Vice-Chairman**, Indian Society of Remote Sensing, Delhi Chapter (2022 onwards)
- **Joint Secretary**, Indian Society of Remote Sensing, Delhi Chapter (2018-2020)
- **Vice-Chairman**, Indian Society of Remote Sensing, Delhi Chapter (During 2016-2018)
- **Member,** Advisory Committee, Board of Research Studies (Mathematical Sciences), University of Delhi

Membership of Boards/Committees (Inside JNU)

- **Member**, Academic Council, Jawaharlal Nehru University, New Delhi from July 2023 until now
- **Member**, Committee of Advanced Studies and Research, School of Social Sciences, Jawaharlal Nehru University, New Delhi from July 2023 until now
- **Member**, Board of Studies, School of Social Sciences, Jawaharlal Nehru University, New Delhi from July 2023 until now
- **Member**, Academic Council, Jawaharlal Nehru University, New Delhi July 2015 to June 2017
- **Member,** Court of the University, Jawaharlal Nehru University, New Delhi. July 2015 to June 2017.
- **Member,** Board of Studies, School of Social Sciences, Jawaharlal Nehru University, New Delhi. April 2014 to April 2017.
- **Member,** Disaster Management Committee, JNU, New Delhi (2010-2015)
- **Member,** Environmental Task Force, JNU, New Delhi (2014-2016)

External Examiner

1. University of Kashmir, Srinagar, Kashmir
2. University of Delhi, New Delhi
3. Kurushetra University, Kurushetra, Haryana
4. University of Kerala, Thiruvananthapuram
5. Tezpur University, Assam
6. Rajiv Gandhi University, Itanagar, Arunachal Pradesh
7. Savitri Phule Pune University, Pune
8. Presidency University, Kolkatta, West Bengal
9. Kannur University, Kerala
10. Aligarh Muslim University, Aligarh, Uttar Pradesh
11. Vidhya Sagar University, West Bengal
12. TERI School of Advanced Studies

Advanced Training Received

- IIRS EDUSAT 21 Course on "**Remote Sensing and GIS Applications in Water Resources Management**" during 22 May to 9 June 2017
- Training on **Integrated Catchment Modelling using MIKE SHE and MIKE HYDRO RIVER** conducted by DHI, New Delhi during 5-7 October, 2016.
- Training in **ArcGIS 8.3**, February 2004, ESRI-NIIT India, New Delhi
- **Advanced training in GIS and internet mapping applications,** June-July 2001, Jointly organised by University of Redlands, University of California and Environment Systems Research Institute, California.
- Training on application of **remote sensing and GIS for watershed management,** May 2000, GIS Application Centre (GAC), School of Advanced Technology, Asian Institute of Technology, Bangkok, Thailand.
- Training on "***Geographic Information System and Water Management for Industrial Activities***" at Hanoi, 8-18 June 1997, organized by the International Center for Science and Technology (ICS) of UNIDO and the Ministry of Industry of the Government of Vietnam
- Training on ***Digital Image Analysis in the field of Remote Sensing Technology***, 1990 at Regional Remote Sensing Service Centre, Nagpur (RRSSC), Dept. of Space, Govt.of India.

Reviewer for following Journal

1. Natural Hazards 2. Arabian Journal of Geosciences 3. Journal of the Geological Society of India 4. Atmospheric Environment 5. Journal of Hydrology 6. Journal of Climate Change 7. Natural Resource Review 8. Meteorological Applications 9. Natural Resource Review 10. Environmental Monitoring and Assessment 11. Journal of the Indian Society of Remote Sensing 12. Stochastic Environmental Research and Risk Assessment 13. Ecological Indicators. 14. Asia-Pacific Journal of Atmospheric Sciences. 15. Environment Research. 16. Journal of Applied Remote Sensing 17. Surface

Water Resource Management 18. Environment Science and Pollution Research 19. Coastal Conservation 20 Arabian Journal of Geosciences 21Water Resources Management 22. Journal of Geological Society of India 23. Modelling Earth System and Environment 24. Journal of Regional Hydrology 25. Singapore Journal of Tropical Geography. 26. Helion.