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Evidence based policy research for contributing to sustainable development

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Biodata of Dr. Harini Santhanam, Department of Public Policy, MAHE BLR

Dr. Harini Santhanam is an Associate Professor and HOD of the Department of Public Policy, MAHE BLR. She is an environmental scientist and a sustainability researcher, with special emphasis on evidence-based policy research. She has been associated with the National Institute of Advanced Studies, Bangalore, India since 2019 with the Energy, Environment, and Climate change program, where she conducted inter-disciplinary research on the science and policy perspectives associated with land, water, and air quality, vulnerability assessments, and policy gaps. Before NIAS, Dr. Harini was a long-term postdoctoral associate with IISc Bangalore where she had worked in multi-disciplinary teams associated with the assessment of water quality, geochemistry, and development of lake environmental indices. These valuable experiences bring forth important perspectives to identify and analyze critical gaps in the socio-ecological and environmental quality research in India.

She has been involved in integrating domain-specific scientific analyses with policy perspectives (for example: geochemistry and sustainability), creating a framework for socio-technical constraints assessment (with special reference to geospatial technologies), technology policy analyses etc. She uses problem-based approaches to analyze critical gaps in the socio-ecological research. Her areas of interest include research on ecosystem services assessment, policy enablement for positive land-water-human nexus, methodologies for building ecosystem and climate resilience, and the use of data-based policies as levers for sustainable development.

She has been a recipient of the AICTE National Doctoral Fellowship, MOES Postdoctoral Fellowship, and DST Woman Scientist Fellowship and has considerable experience in leading research teams in India. She is also a recognized expert with IGNOU University and provides online lectures for PG Diploma and Master Courses in Sustainability Science. Recently, she edited a book titled "Blue-Green Infrastructure across South Asian countries" published by Springer publishers, Singapore. She has many awards to her credit for her academic and research achievements and has authored over 50 international journal papers, book chapters and conference papers.

SELECTED PUBLICATIONS

In journals

1. Shalini Dhyani, Harini Santhanam, Rajarshi Dasgupta, Dhanya Bhaskar, Indu K. Murthy, Kripal Singh (2022) Exploring synergies between India's climate change and land degradation targets: Lessons from the Glasgow Climate COP, *Land Degradation and Development*, <https://doi.org/10.1002/ldr.4452>
2. Santhanam, H., Dhyani, S. (2022) Lake ecosystems as proxies of change in a post-pandemic era. *Environmental Sustainability* 5, 389–393 . <https://doi.org/10.1007/s42398-022->
3. Harini Santhanam, Shalini Dhyani and Xavier Benedict (2022) 'Perspectives on reducing anthropogenic interferences and mainstreaming Nature-based solutions for sustainable restoration of Pulicat lagoon, India from research to policy and implementation' *Marine and Freshwater Research*, CSIRO Australia. <https://doi.org/10.1071/MF21242>
4. Harini Santhanam, Shalini Dhyani, Sudip Kumar Kundu (2022) 'Ecosystem-based approaches to develop a monitoring framework for restoring the transitional lagoon ecosystem of Pulicat, India' *Ecological Engineering*, Volume 179, 106608, <https://doi.org/10.1016/j.ecoleng.2022.106608>.
5. Santhanam, H., Kundu, S.K. (2022) 'Assessment of Socio-technical Constraints of Marine Fishers in the Utilisation of Marine Fishery Advisories in Southern Odisha, India' *Anthropocene Science*, Springer, 1, 109–120. <https://doi.org/10.1007/s44177-022-00014-4>
6. Harini Santhanam, Rudrodip Majumdar (2022) 'Quantification of green-blue ratios, impervious surface area and pace of urbanisation for sustainable management of urban lake – land zones in India -a case study from Bengaluru city' *Journal of Urban Management*, In press. <https://doi.org/10.1016/j.jum.2022.03.001>

7. Shalini Dhyani, B. Dhanya, Harini Santhanam, Indu K Murthy (2021) 'Restoring landscapes for post-pandemic rural livelihood recovery and achieving global targets in India', *Restoration Ecology*, pp 1-8, Early View Record : e13617; Weblink: <https://doi.org/10.1111/rec.13617>
8. Sudip Kumar Kundu, Harini Santhanam (2021) 'All pain and no gain: Factors impacting local and regional sustainability due to COVID-19 pandemic with respect to the Indian marine fisheries', *Current Research in Environmental Sustainability*, Volume 3, <https://doi.org/10.1016/j.crsust.2021.100086>.
9. Sudip Kumar Kundu & Harini Santhanam (2021) 'A report on the impacts of cyclone Yaas over a fish landing centre vulnerable to cyclonic storms and natural hazards – Talsari, Northern Odisha', *Local Environment*, 26:9, 1043-1050, DOI: 10.1080/13549839.2021.1964457
10. Santhanam, H., Karthikeyan, A. and Raja, M. (2020) 'Saturation indices of aqueous mineral phases as proxies of seasonal dynamics of a transitional water ecosystem using a geochemical modeling approach' *Modeling Earth Systems and Environment*, Online First; <https://doi.org/10.1007/s40808-020-00910-x>
11. Harini Santhanam and Amalraj, S. (2019) 'Spatial-temporal analysis of salinity changes in a transitional water ecosystem during 1996-2008 – the case of Pulicat lagoon (Southeast India)' *Water Science*, 33:1, 93-104, <https://doi.org/10.1080/11104929.2019.1661944>
12. Harini Santhanam, Anjum Farooqui, Anandasabari Karthikeyan (2018) 'Bloom of the diatom, *Biddulphia sp.* and ecology of Pulicat lagoon, Southeast India in the aftermath of the 2015 North east monsoonal rainfall', *Environmental Monitoring and Assessment*, 190: 636. <https://doi.org/10.1007/s10661-018-7020-9>
13. H. Santhanam and T. Natarajan (2018) Short-term desalination of Pulicat lagoon (Southeast India) due to the 2015 extreme flood event: insights from Land-Ocean Interactions in Coastal Zone (LOICZ) models, *Ecological Processes*, Vol 7, No. 10, 1-13, <https://doi.org/10.1186/s13717-018-0119>
14. P. Mageshkumar, Harini Santhanam, Stalin John M.R., S. Amal Raj (2013) 'Modelling of Chlorophyll-A Concentrations in Pulicat Lagoon, Southeast Coast of India Using Artificial Neural Network' *Int. J. Sci. Res*, Vol 2., No.6, pp 186-193.
15. S. Sathish Kumar, P. Mageshkumar, Harini Santhanam, M.R. Stalin John, S. Amalraj (2013) 'A New Logic-based model to predict nitrates in groundwater using Artificial Neural Network (ANN)' *Poll. Res.*, Vol 32, No. 03, pp. 635-641, 2013.
16. H. Santhanam, S. Amal Raj, and K. Thanasekaran (2011) Comparison of the performance of two indices of trophic status for depicting the status of Pulicat lagoon ecosystem., *J. Env. Sci. & Engg.*, NEERI, Nagpur, Vol. 53, No. 4, pp. 513–522.
17. H. Santhanam and S. Amal Raj, (2010) A new Fuzzy-LOGIC based Model for Chlorophyll-a in Pulicat Lagoon, India," *Int. J. Environ. Res*, Vol. 4, No. 4, pp. 837–848. https://ijer.ut.ac.ir/article_270_aad0c1707afa3584c4b8769f068ec61e.pdf
18. H. Santhanam and S. Amal Raj, (2010) Carlson's Index, a poor cursor of trophic status assessment of Pulicat Lagoon, southeast coast of India, *Int. J. Env. Stud.*, Vol. 67, No. 1, pp. 17–25. <http://dx.doi.org/10.1080/00207230902884000>
19. H. Santhanam, S. Amal Raj, and K. Thanasekaran (2010) Selection of Suitable Ecosystem Indicators as Tools to Assess the Ecosystem Health of Coastal Lagoons and Their Implications in Management, *Asian J. Wat. Env. Poll.*, Vol. 7, No. 2, pp. 59–64. <https://content.iospress.com/articles/asian-journal-of-water-environment-and-pollution/ajw7-2-09>
20. H. Santhanam, S. Amal Raj, and S. Thanasekaran (2009) Predictive Capability of Three Empirical Models in Estimating the Chlorophyll: A Comparative Case Study of Ecosystem, *Int. J. Ecol. & Dev.*, Vol. 14, No. F09, pp. 95–107. <http://ceser.in/ceserp/index.php/ijed/article/view/396>

Conference / Symposia Proceedings

1. Harini Santhanam and Sudip Kumar Kundu (2022) Technology enablement policies in the 'new-normal' as levers for conservation and sustainable growth of coastal mangrove zones in India. Presented at "Future of Indian Mangroves: Consultative Workshop Asia; Mangrove Forests of Asia-Pacific: Nature Based Solutions for Climate Resilience and Disaster Risk Reduction", New Delhi, 18th October, 2022, organised by IGES, APN and CSIR NEERI.

2. Harini Santhanam (2021) Greening the grass, blueing the water: aligning environmental neuroscience with blue-green infrastructure planning to synergise the delivery of Nature-based Solutions. 3rd ESP Asia conference. Nagasaki, Japan, Dec. 14-17, 2021.
3. Sudip Kumar Kundu and Harini Santhanam (2021) Indigenous knowledge as 'socio-economic strongboxes' in emerging coastal cities - technology versus ecosystem services from selected marine fish landing centres in Odisha, India. 3rd ESP Asia conference. Nagasaki, Japan, Dec. 14-17, 2021
4. Sudip Kumar Kundu and Harini Santhanam (2021) Investigating the Roles of Marine Fishery Advisories in the Reduction of Carbon Dioxide under Varying Climate Change Scenarios for the Bay of Bengal. INTROMET-2021. Cochin, India, Nov. 23-26, 2021. Sudip Kumar Kundu and Harini Santhanam (2021) Anthropogeomorphology of marine fisheries in India: understanding the critical roles of Marine Fishery Advisories towards achieving SDG 14, EGU General Assembly 2021, EGU21-2250; <https://doi.org/10.5194/egusphere-egu21-2250>
5. Sudip Kumar Kundu and Harini Santhanam (2021) Quantification of transitions matrix of marine fish landings of India as precursor of a potential value chain using a Blue Economy approach, Proceedings of the 57th Annual Convention of Indian Geophysical Union, IGU-VIRTUAL, "Sustainable Geosciences and Blue Economy", February 2-4, 2021, CSIR-NIO, Goa.
6. Sudip Kumar Kundu and Harini Santhanam (2020) An overview of the impacts of Covid-19 on marine sector in India and their implications for achieving sustainable development of marine resources. Abstract in Procs. International Virtual Conference on Earth's Changing Climate: Past, Present & Future 15-17 October 2020, Pg.93.
7. Sudip Kumar Kundu, Harini Santhanam, R Srikanth (2020) Use of Geospatial Technology for Sustainable Development of Small-Scale Fisheries in India: Challenges and Way Forward, AGU Fall Meeting 2020 <https://doi.org/10.1002/essoar.10505256.1>
8. Sudip Kumar Kundu, Harini Santhanam, R Srikanth (2020) A Technical Assessment of the Use of Current Geospatial Technologies to Derive Marine Fishery Advisories in India and the Way Forward, Asian Conference on Remote Sensing 2020 Full paper available at : <https://a-a-r-s.org/proceeding/ACRS2020/ifomqo.pdf>
9. VP Lavanyaa, J Singh, H Santhanam (2020) Urban air quality in India during the COVID lockdown: Learnings from Bengaluru and New Delhi. AGU Fall Meeting 2020, <https://agu.confex.com/agu/fm20/meetingapp.cgi/Paper/731289>
10. A Ahmed, H Santhanam, R Srikanth (2020) A Multidisciplinary framework for sustainable water resources management - A case study of the Almatti-Pennar ILR Scheme XIV World Aqua Congress 2020 (WAC 2020) 1, 13-26
11. Harini Santhanam and R. Srikanth (2019) 'Pit lakes as sustainable post-closure interventions for open-cast coal mines in the Indian context', Proceedings of World Aqua Congress 2019, 30th - 31st October 2019, Vol 1, pp 74-85.
12. Leena Ramdas, Ravi Rangarajan, Harini Santhanam, Prosenjit Ghosh (2011) 'Estimating the water recharge during monsoon in Bangalore lakes using stable isotope measuring technique' Workshop on Monsoon Variability, Centre for Atmospheric and Oceanic Sciences and Divecha Centre for Climate Change, Indian Institute of Science, Bangalore
13. Harini Santhanam (2011) 'Studies on the use of stable isotopic analysis for the reconstruction of past environmental conditions of Lake Pulicat', First In-house symposium, Centre for Earth Sciences, IISc Bangalore, 13th January, 2011. *Was the organiser for the event and chaired a session on 'Atmospheric and climatological studies'*
14. Harini Santhanam, Magesh Kumar, P. and Amal Raj, S. (2008) 'Application of Fuzzy Indices to determine the trophic status of Pulicat Lagoon, Southeast Coast of India', Lake-2008, Conservation and Management of River and Lake Ecosystems, IISc Bangalore, December, 2008
15. Harini Santhanam, Amal Raj, S. and Thanasekaran, K. (2007) 'An Interactive Spatial Model of Pulicat Lagoon Using Geographic Information System' In Proceedings of 12th World Lake Conference, TAAL-2007, pp 691-696.

Book, Book chapters, Reports and Peer-reviewed magazine articles

1. Shalini Dhyani, Mrittika Basu, Harini Santhanam and Rajarshi Dasgupta (2022). Blue-Green Infrastructure Across Asian Countries, Edited volume, Hardcover ISBN : 978-981-16-7127-2, Softcover ISBN : 978-981-16-7130-2, eBook ISBN : 978-981-16-7128-9; First Edition, 518 pp., Springer Singapore. DOI : <https://doi.org/10.1007/978-981-16-7128-9>
2. Dhyani, S., Singh, S., Basu, M., Dasgupta, R., Santhanam, H. (2022). Blue-Green Infrastructure for Addressing Urban Resilience and Sustainability in the Warming World. In: Dhyani, S., Basu, M., Santhanam, H., Dasgupta, R. (eds) Blue-Green Infrastructure Across Asian Countries. Springer, Singapore. https://doi.org/10.1007/978-981-16-7128-9_1
3. Santhanam, H., Kundu, S.K. (2022). Nature-Based Solutions (NbS) for Sustainable Development of the Resource Base and Ecosystem Services of Marine and Coastal Ecosystems of India. In: Dhyani, S., Basu, M., Santhanam, H., Dasgupta, R. (eds) Blue-Green Infrastructure Across Asian Countries. Springer, Singapore. https://doi.org/10.1007/978-981-16-7128-9_15
4. Varshini, S., Hungund, K., Kundu, S.K., Santhanam, H., Dhyani, S. (2022). Assessing Ecological Risks of Urban Air and Water Environment to Analyse the Scenarios for Mainstreaming Nature-Based Solutions: A Case Study of Bengaluru City, India. In: Dhyani, S., Basu, M., Santhanam, H., Dasgupta, R. (eds) Blue-Green Infrastructure Across Asian Countries. Springer, Singapore. https://doi.org/10.1007/978-981-16-7128-9_8
5. Santhanam, Harini; Kaur, Sarbjeet and Kundu, Sudip Kumar (2021, September) "Maximum Sustainable yields, Marine trophic status and Nature-based Solutions – balancing the ying-yang of marine sustainability". *Harnessing Nature* 3(1), Pages (39-40). Retrieved from <https://harnessingnatureblog.wordpress.com/harnessing-nature-magazine/>
6. Dhyani S, Majumdar R, Santhanam H (2021) "Scaling-up Nature-Based Solutions for Mainstreaming Resilience in Indian Cities" In: Mukherjee M., Shaw R. (eds) *Ecosystem-Based Disaster and Climate Resilience. Disaster and Risk Research: GADRI Book Series.* Springer, Singapore. https://doi.org/10.1007/978-981-16-4815-1_12
7. Santhanam H., Majumdar R. (2020) "Permeable Pavements as Sustainable Nature-Based Solutions for the Management of Urban Lake Ecosystems" In: Dhyani S., Gupta A., Karki M. (eds) *Nature-based Solutions for Resilient Ecosystems and Societies. Disaster Resilience and Green Growth.* Springer, Singapore. https://doi.org/10.1007/978-981-15-4712-6_19
8. Chanchal Chauhan, Sameer Mishra, Sujit Swain, Harini Santhanam, R Srikanth (2020) "Coal Mining and Environment: A Case Study of Dorli Opencast Coal Mines" (NIAS/NSE/EEP/U/RR/06/2020), National Institute of Advanced Studies (NIAS), Bangalore report.
9. Harini Santhanam "Calcite fluxes in Pulicat lagoon (South-east India) as a geochemical proxy of environmental changes", 2018, Final report of DST Woman Scientists Project (2015-18), submitted to Department of Science and Technology, Government of India, pp 167.
10. Harini Santhanam and Amal Raj, S. "Nutrient Budgets for Pulicat Lagoon using the LOICZ Approach" for the ENVIS Special Publication, Lagoons of India, State-of-the-art Report, ENVIS Series 2/2015, Centre for Advanced Studies in Marine Biology, Parangipettai, Tamilnadu, sponsored by Ministry of Environment and Forests, Government of India, 2016, pp 7-22.