

Dr. Jayasree Vaidyanathan

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PERSONAL SUMMARY

I hold a Ph.D degree in Meteorology from Cochin University of Science and Technology, Kerala. Am a competent and experienced researcher with more than 20 years' experience in Hydrometeorology, Statistical modelling, Remote sensing and Geographic Information Systems and Wind Energy. Extensively worked on river catchments across various geographical locations such as Kerala, Tamil nadu, Karnataka, Uttar Pradesh, Nepal and Himachal of different sizes and complexity. I have been working on issues related to Land-Water Interactions, extreme events estimation, and prediction (floods and droughts), water scarcity issues, and community management of water resources, WaSH, water conservation practices, Land-Water-Energy nexus and similar topics. Expertise in processing large meteorological and hydrological data sets using statistical modelling tools such as Trends, forecasting, SWAT, ARNO, HECRAS, TOPMODEL, MICROESM, INMCM4 and many others. I possess strong analytical, conceptual, management, presentation, and communication skills. Acquaintance with water related policies and advocacy. Expertise in preparation of training modules and in delivering training on various issues and capacitated to generate funds. A strong team player with ability to independently manage teams and build relationships. Have worked with international and national agencies and was part of multi-disciplinary team consisting of scientists, social scientists, experts of other fields, policy makers and national/international specialists. A resource person for river basin development and other water issues in the State of Kerala and for Noyyal river basin, Tamil Nadu and a science communicator and trainer of trainers to youth, women and scientific community.

My current research interests include Ancient Indian wisdom on Water management, Environment conservation and wellbeing of school children.

EXPERTISE

Meteorology, **Hydrometeorology**, Climatology, Climate change, **Flood/Drought** Modelling, Land-water interaction in river basin context, Drinking water issues, water conservation, Urban and rural water management issues, WaSH, Data handling, Statistical modelling, Remote sensing, Geographic Information Systems, Hydrology and Extreme events modelling, GCM modelling, Wind data processing and energy estimation. Science communication and Ancient Indian Knowledge system related to water and environment.

QUALIFICATION

PhD in Meteorology specialization in Hydrometeorology from Cochin University of Science and Technology, Kerala.

MSc in Meteorology from Cochin University of Science and Technology, Kerala

PG Diploma in Remote Sensing and Geographic Information Systems. (2000). Penta soft technology, Bengaluru

Certification in Computer Applications from LBS Technology, Kerala.

EMPLOYMENT

Current: 2016 onwards- Principal Investigator and Scientist, National Institute of Advanced Studies, Bengaluru

2015-2016 -- SR Nova Technology (Technical Editor),

2014 – AIG-Flood Modeller

2012-2014 – Post Doc Researcher, NIAS, Bengaluru

2009-2012 – Project Scientist, TIDE, Bengaluru

2003-2008 – Post Doc Fellow , CISED, Bengaluru

2001-2002 – Fellow & consultant, Watershed management, IRTC, Palakkad, Kerala

1998-1999 -- Wind research engineer. Asian Wind Turbines (P) Ltd., Chennai

1997-1998 Technical Editor, NewGen Imaging Systems. Chennai

CONSULTANCY SERVICES

Wangjing Women and Girl's society. Manipur. Solid waste management for Wangjing Municipal corporation. June 2020 onwards

PEFSSSED, Mumbai – Consultant, Water and Sanitation consultant (short term)

Winrock International, New Delhi - Disaster Risk to Resilience. Flood mapping for Rohini river catchment, Uttar Pradesh and Nepal. Analyse and report data on rainfall, runoff and flood using statistical and GIS tools (2007 - 6 months)

Integrated Rural Technology Centre, Kerala. Watershed Master Plan-Meenvallom catchment, Palakkad, Kerala (4 months)

CCES Global, Bengaluru. Wind energy assessment for offshore wind park in USA (3 months).

AIG Bengaluru – Flood modelling (1 month)

Tarang Technologies, Bengaluru - Statistical Modelling (3 months)

SPECIAL SKILLS

Strong computing skills, Micro station 95, AutoCAD Map 2000, GIS-ESRI-Arc View, Erdas Imagine, Q-GIS, ArcScan, ILWIS, IDRISI, PC-ArcInfo, MS Office, MS_Access, Flash-8, Wind Atlas Statistical Package-WASP, and statistical packages - SPSS, SAS, JUMPIN, Usage of satellite imagery and GPS system. Training of trainers

FUNDS RECEIVED & POSITIONED AS PRINCIPAL INVESTIGATOR

Water Hyacinth: A Resource for Energy, Rural Enterprise and Women Empowerment in Kuttanad region. Department of Science and Technology, New Delhi (2018 -- 30 months -- on going)

Development of water entrepreneurs for Integrated Eco-WASH technology and practices literacy through women self-help groups in Marginalized areas. NCSTC, New Delhi (2016-2018, 24 months)

Assessment of impact of man-made changes on Hydrological functions of Varahi River Basin, Karnataka. Department of Science and Technology (2009 -2011 --24 months)

Development of watershed-based master plan for Mundathikode watershed, Palakkad.. CED, Trivandrum (2001-2002,14 months)

Preparation of Bio-climatic map for the Paikandom watershed, Kerala. STEK, Kerala. 1996-1997. (short term 4 months)

Proposal Submission

Socio-Economic Empowerment and self-reliance of women through value addition of aquatic weeds in Alleppey, Kerala --Not successful

Popularizing science amongst school children through promotion, skill development and training - Not successful

Effect of integrated approach of a yoga module on their physical, mental, and spiritual well-being of Indian school students: A Randomised Block Design Study -Co PI- Submitted - Under review.

Assessment of knowledge, attitude, and attributes of adolescent school children with reference to stress experienced during a crisis like COVID-19 and evolve a functional yoga and meditation module to alleviate the stress-Submitted SATYAM special call on COVID-19. Under review.

Sustainable technological interventions for addressing challenges pertaining to Water and Energy security for Sasthamkotta, Loktak, Vehraimata and Kurichi Kulam lakes in India- Submitted to Technological Intervention for Sustainable Environment Programme-Under review.

Indian Ancient Knowledge System for Holistic Development of a Child – Co -PI Submitted to DST- Under Review

PRESENTATIONS

Jayasree V and Rajan C.K. (1994). A study on rain spells at Bharathapuzha river basin. Paper presented at International conference on Hydrology and Meteorology. April 16-19, 1994. Kathmandu, Nepal

Jayasree, V. and Anil Kumar K.G. (1995) 'A study of the daily rainfall distribution over a river basin' *Proceedings of the TROPMET '95*, Hyderabad, PA04.

Jayasree V and B. Venkatesh.(2009). Estimation of Flood frequency for a flood-prone river basin in East Uttar Pradesh. Paper Presented at Second International Seminar on disaster Management, NIDM, Nov-4-6, New Delhi.

B.Venkatesh and V.Jayasree. (2009). Mapping of drought severity in Bijapur district, Karnataka. Paper Presented at Second International Seminar on disaster Management, NIDM, Nov-4-6, New Delhi.

V.Jayasree and B.Venkatesh. (2011). Flood frequency analysis of Rohini River in East Uttar Pradesh. A case study. Paper presented at Disaster Vulnerability and Risk Assessment Conference, Kottayam during March 12-14, 2011.

GG Chandengeri, V.Jayasree and H.C. Manjunath- (2011). School and community Horticulture Enterprise-A livelihood option to ensure food security, sustainability and improve child nutrition. Paper presented at Disaster Vulnerability and Risk Assessment Conference, Kottayam during March 12-14, 2011.

V.Jayasree 2012. Evaluating changes in water resources due to impact of man-made modifications for the Varahi river catchment, Karnataka. Presented during World conference on applied sciences and technology summit. 17-19 August. Vijayavada.

Hippu SK Nathan V.Jayasree and V V Binoy (2012). Roof water harvesting challenges. A case study from Bengaluru city. Hydro 2012. 7-8 December, IIT Bombay.

V.Jayasree.(2014). Comparison of baseflow separation methods in a highland catchment in Karnataka. Paper Presented at International conference on water resources management. February 19-21. CWRDM. Calicut. Kerala

V.Jayasree.(2014). Urbanisation and water management in the Bengaluru city, Karnataka— Issues, challenges and possible solutions. Paper Presented at International conference on water resources management. February 19-21. CWRDM. Calicut. Kerala

V.V.Binoy, V.Jayasree and Shantha Mohan.(2014).What kind of water do people prefer? Drinking water choices in areas with multiple sources. Paper Presented at International conference on water resources management. February 19-21. CWRDM. Calicut. Kerala

Hippu SK Nathan, V.Jayasree and V.V.Binoy.(2014). Is roof water harvesting an answer to urban water crisis? A case study of Bengaluru city. Paper Presented at International conference on water resources management. February 19-21. CWRDM. Calicut. Kerala.

Hippu SK Nathan and V.Jayasree.(2014). Water and sanitation literacy through women self help groups in marginalised areas. Enabling water users to water entrepreneurs. Paper Presented at International conference on water resources management. February 19-21. CWRDM. Calicut. Kerala

V.Jayasree and B. Venkatesh.(2017). Landscape changes and hydrological alterations. A case study of Varahi river catchment, Karnataka. ICHES conference, Belgaum

V.Jayasree, HSK Nathan and N.C. Induchoodan.2017. Nipping the bud, Managing water crisis in the Kochi city of Kerala. ICHES conference, Belgaum.

V. Jayasree. HSK Nathan and NC Induchoodan, 2017. Water management strategies for growing water crisis in a mega city in Kerala. Hydrology and Meteorolgy conference- SOHAM. Kathmandu.

V.Jayasree. 2017. Drought severity assessment and Mapping in the drier region of Karnakata.Paper presented at Disaster, Risk and Vulnerability conference. Trivandrum. Kerala.

V Jayasree 2018 Water Hyacinth : A resource for energy, local enterprise and livelihood, National Agriculture Research and Management, Hyderabad. Telungana.

Jayasree.V. 2019. Imparting Education, Ancient Times and Now. Paper presented at National Institute of Advanced Studies, Bengaluru - Conference on Ancient Indian Knowledge System for wellbeing of School children for their physical, mental, and spiritual development. May 7-8,2019.

Jayasree V and N. C. Induchoodan. 2020. Water hyacinth: Opportunity vis-z vis Challenge. International conference on Environment challenges and solutions. Jan 31-Feb 2, 2020, Manava Rachana University, Faridabad

Jayasree V and HSK Nathan.2020. Managing the growing water crisis. International conference on Environment challenges and solutions. Jan 31-Feb 2, 2020, Manava Rachana University, Faridabad

Jayasree V. 2020. Impact of food wastage on environment sustainability International conference on Environment challenges and solutions. Jan 31- Feb2, 2020, Manava Rachana University, Faridabad

Jayasree. V. 2020. Water scarcity in a water rich region- Issues, challenges, and solutions. 2020. Presented at Kerala Swadeshi Science Congress. Feb 27-29, 2020. CPCRI, Kasaragod.

Devika S, Jayasree V, Mondal S, Borah N, Anusree NS, Binoy VV (2020) Student's Attitude Towards the Strategies for Mitigating Water Scarcity: Does it Change with the Age? National Conference on Science and Technology for Sustainable Development, 29th

Swadeshi Science Congress. ICAR -Central Plantation Crop Research Institute (CPCRI) Kasaragod, Kerala, 28-29 February 2020

7. Mondal S, Devika S, Jayasree V, Borah N, Kumaraswamy T R, Binoy VV (2020) 'Girls Vs. Boys' - Does Gender Influence the knowledge and attitude of school children from water scarce rural regions towards water management? National Conference on Science and Technology for Sustainable Development, 29th Swadeshi Science, Kasargod, Kerala

PUBLICATIONS

Rajan, C.K. and Jayasree, V. (1993) 'A study on the rainsqualls at Cochin' *Proceedings of the Kerala Science Congress 1993*, p. 366. Paper presented for the Kerala Science congress, 1993.

Jayasree, V. and Rajan, C.K. (1994) 'Hydro meteorological studies with special reference to river basins – A review' *Geographical review of India*, 3, pp. 15-25.

Jayasree, V. and Anil Kumar K.G. (1997) 'Some aspects of daily rainfall distribution over a high range river basin in central Kerala' *Mausam*, 48(1), pp. 71-76.

Jayasree V.(2008). Spatial distribution of daily precipitation in Bhadra River Karnataka. J. Applied Hydrology. Vol XXI No 1&2. Jan-Apr.2008

Jayasree and B.Venkatesh. (2011). Evaluating the hydrological response to land cover change. Dasanakatte catchment of Varahi river, Western Ghats. Karnataka. Inter.Jour. Water resource and Environment Management. Vol.2. No.2 pp.:1-6.

Jayasree and B.Venkatesh. (2012). Evaluating changes in water resources due to the impact of man-made modifications for the Varahi river basin, Karnataka. Inter.J. Earth Sciences and Engineering.Vol.5 No.4.pp:863-871.

V.Jayasree and B. Venkatesh, (2015). Analysis of rainfall in assessing the drought in semi-arid region of Karnataka state, India. Water Resources Management.Vol 29 Issue15.pp 5613-5630.

Comparison of Several Reference Evapotranspiration Methods for Western Ghats Region of Karnataka, India - Jayasree and Venkatesh -Under Review

Assessing effect of Wet and Dry Year Data on Optimal Model Parameters of a Conceptual Rainfall-Runoff Model – Venkatesh and Jayasree. Journal of Water resources society. Vol 39, no.4. October 2020. Pp 42-50.

A study on ecological consequences of food wastage – Jayasree and Madhan Shankar – Indian Journal of Pharma Research- Indian Journal of Pharmacology research (IJPR). Vol 11, 1, pp 11-17. Jan-June 2020.

Sacred groves as pockets of genetic biodiversity- Madhan Shankar, V.Jayasree Kathivelkumaran and Naachimuthu-Indian Journal of Pharma Research- Accepted
Book Chapter

H.S.K Nathan and V.Jayasree.(2015). Self Help groups: A medium of water management and conflict resolution. National Institute of Advanced Studies.2014. Sharing Blue Gold: Locating water conflicts in India. Published by NIAS.

Flood disaster vulnerability assessment and mapping using HECRAS- A case study from Neerasagar Reservoir, Karnataka – Jayasree and Venkatesh. Compendium on climate change and disaster risk management: CAP-RES project of DST and NIDM -**In Press**

An analysis of knowledge, attitude, and practices (KAP) with reference to drinking water in Alleppy district in Kerala and evolve effective management practices for sustainable water

usage and instil green thinking. Jayasree and Madhan Shankar- Compendium on case studies for green growth – CAP-RES project of DST and NIDM- **In press**

Evolution of Indian education system from Ancient to Contemporary times – January 2021.

NIAS publication. **In press**

Water for life and beyond – The cleansing element –**In Press**

Edited volumes

Ancient Indian knowledge system for holistic development of youth. M. Sai Baba and V. Jayasree. January 2021.

Pancha-bootha concept in Physical and mental wellness", with editors, S.R. Madhan Shankar, C.A. Vasuki from KASC, and V. Jayasree from NIAS, Bengaluru. February 2021.

Reports

V. Jayasree. Preparation of Bio-climatic map for the Paikandom watershed, Kerala. STEK, Kerala. 1996-1997. (short term 4 months)

Sharathchandra Lele, Jayasree.V and Santhosh Hegde. (2005). Influence of forest cover change on watershed/hydrologic functions: A coarse scale analysis for the Western Ghats. Report submitted to UNESCO-IHE.

Sharathchandra Lele, Jayasree.V and Santhosh Hegde. (2006). Influence of forest cover change on watershed/hydrologic functions: A cross scale analysis for the Western Ghats. Indian Space Research Organization. Bangalore.

Jayasree V. (2008). Report on Flood Mapping for the Rohini River Basin, Uttar Pradesh as a part of the project "From risk to resilience-Rohini River Basin" for Winrock International, New Delhi

Jayasree V. (2011). Assessment of impact of man-made changes on Hydrological functions of Varahi River Basin, Karnataka. Submitted to Department of Science and Technology, New Delhi.

Shantha Mohan, A.K.Ghosh and V.Jayasree. (2012). WAR for water programme. Bhuja Bhuja Panchayat. Submitted to Department of Science and Technology, New Delhi.

Shantha Mohan, A.K.Ghosh and V.Jayasree. (2012). WAR for water programme. Mamasapuram Panchayat, Tamil Nadu. Submitted to Department of Science and Technology. New Delhi.

Shantha Mohan, A.K.Ghosh and V.Jayasree. (2012). WAR for water programme. Thirupattur Panchayat, Tamil Nadu. Submitted to Department of Science and Technology, New Delhi.

Shantha Mohan, A.K.Ghosh and V.Jayasree. (2012). Consolidated report on WAR for water programme. Tamil nadu and Andhara Pradesh. Submitted to Department of Science and Technology. New Delhi.

Shantha Mohan and V. Jayasree. (2013). Social and Technological solutions to drinking water challenges facing India. Submitted to Water technology Initiative. Department of Science and Technology. New Delhi.

Impact of water availability and quality on health and Occupation. A case study from Doddaballapur Taluk in Bangalore rural district. National Institute of Advanced studies, Bangalore. 2013.

Development of “water entrepreneurs” for ‘integrated Eco-WaSH technology and practices’ literacy through women Self-Help Groups (SHGs) in marginalized areas. 2018. NSCTC, New Delhi.

Assessment of flood disaster 2018. Haritha Keralam Mission. Trivandrum India.

Communicating Ancient Indian Knowledge System for the holistic development of school students for their physical, mental, and spiritual wellbeing_NIAS report. June 2020.

INVITED TALK

Application of remote sensing and geographic information systems in the water sector. Department of Atmospheric Sciences. CUSAT. Cochin.

Water challenges under changing climate scenario. Department of Atmospheric Sciences. CUSAT. Cochin.

Impact of man-made modifications on hydrological alterations in the Varahi river catchment of Karnataka Western Ghats. Azim Premji Foundation, Bengaluru.

Land scape changes and their impact on Water resources of catchments of Western Ghats, Swadeshi Science Movement. Kerala

Evaluation of changes in climate and land use on water resources of Varahi river basin in Western Ghats. NERCI, Cochin.

Land scape changes and dwindling resources of Bharathapuzha river basin, Kerala, JNU, New Delhi

Rainfall-Runoff relationship in the Bharathapuzha river catchment, Kerala under changing climate and land cover. Nila Vichara Vedi, Kerala.

Water situation in Kerala and the issues related to water conservation from policy perspectives – Kerala Science Festival, Kerala

Challenges in rejuvenation of Pampa river basin, Kerala – Bala Ashrama, Aranmula, Kerala. July 2019

Land use changes and its impact on Water resources of Bharathapuzha, Kerala- Nila Vichara Vedi, Shoranur, Kerala. 4 Aug 2019

Making the difference through water footprints. Saraswathi Vidya Bhavan, Mamangalam, Kochi-October 2019

Making the difference through water footprint. Bharathiya Vidya Mandir School, Giri Nagar, Kochi-October 2019.

Making the difference through water footprint. Paravmekkavu Vidya Mandir School, Thrissur. October 2019.

India’s water heritage. Vidyabyasa Vikasa Kendram. Kochi, Kerala. 11th April 2020.

Emaluating the best pracrices from Ancient Indian wisdom to circumvent and manage water crisis..Webinar organized by Shiksha Samskriti Utthan Nyas, Tamil Nadu chapter. 30 April 2020

Effective water management strategies. Taking leads from Ancient wisdom. PSGR Krishnammal college for women. National level online faculty development programme on Inclusive Indian tradition for a holistic global education. 8 May 2020.

Water for life and Beyond. The cleansing element. Online faculty development programme organized by Kongunadu Arts and Science college, Coimbatore, Tamil Nadu. 14 May 2020

Water, Food, Energy and Environment nexus. Webinar organised by Teresian college. Mysore. 5 June 2020

Post covid sustenance of Environment consciousness. Webinar V.E.T First Grade college. 5 June 2020

Webinar on Nila Nadi. Ente Anubahvangal in Malayalam (River Nila – My experience) 21 July /2020. Nila Vichara Vedi, Kerala

Vayu Pradooshan ke virudh in Hindi (Fight against Air pollution). Webinar joinedly organized by Shiksha Samskrithi Utthan Niyas and Navjeevan Model School. New Delhi. 29 October 2020.

Panel discussion on Key Aspects of EIA, 2020. Hindustan Arts and science college. Tamil Nadu. 5 Sep 2020.

Panelist for the First Vice Chancellor's enclave Paryavaran Sanrakshan Gatividhi on 16 Sep 2020.

Panel discussion and Webinar on Draft EIA, 2020.Merits and Demerits. Vidyabhyasa Vikasa Kendram. Kochi. Kerala. 24 Sep 2020.

Inaugural panel discussion on Institute for Rural Management, Anand, Gujarat water center. 14 December 2020.

MEDIA

Water scarcity amongst plenty: 2017 How tribal community cope with water scarcity with water sources around. India Water portal

Clearing fog on water conservation. 2017. India water portal

Harvesting water: Can fog condensation be a plausible solution to water scarcity. 2017. Nafed, Mumbai.September 2018.

Wealth from waste: Can the killer weed be beneficial. 2017. Submitted to Janmabhoomi, Kerala daily

Water Hyacinth as a resource in Agriculture, energy production and rural enterprise- . December 2018. Land bank journal.

Surangas Indigenous water harvesting practice for climate adaption- February 2019. Land Bank Journal, NABARD.

Kavukalum Jalasamrakshanavm- Makara Jyothi -In Malayalam

Sacred grooves as hotspots of water conservation- Land Bank Journal of NABARD. June 2019

Making a difference through water footprint for climate change adaptation-Land Bank Journal of NABARD. September 2019.

Project explores resourceful use of Hyacinth: 9, Sep 2019 in times of India

Unravelling Kuttanad's drinking water paradox. India water portal 24/2/2020.

WORK IN PROGRESS

Mitigating water scarcity: Influence of the water context on perspectives of the adolescents – with Binoy et al – Publication under preparation

Impact of technology during COVID-19 and lockdown-Publication under preparation

Coastal Urbanisation and its impact on sustainable blue economy. Publication under preparation.

Water resources assessment and management in Kuttanad back waters-Kerala -Ongoing

Ancient Indian knowledge system for resource management and environment.

Membership

Vigyan Bharathi – Swadeshi Science Movement - Lifetime Member

Shiksha Sanskrithi Utthan Nyas, New Delhi, Lifetime member and Karnataka Head for Environment Education

Core member for Pampa River Rejuvenation, Kerala

Core member for Bharathapuzha river rejuvenation, Kerala

Team member -Environment education - Vidyabhyasa Vikasana Kendram, Kochi, Kerala

Reviewer for the Journal of Social and Economic Development-Springer Publication

PROFESSIONAL TRAINING

- Digital image analysis in the field of remote sensing technology conducted ISRO – Bangalore.
- Micro-siting, site selection techniques and power output generation for Windmills, Chennai provided by Asian Wind Turbines, Chennai
- Food Quality Maintenance at IAFDAC, Bangalore during Feb 13-14, 2010.
- Training of trainers – Technology Informatics Design Endeavour, Fireflies, Bangalore.
- Training of trainers conducted by Hewlett and Packard, Bangalore

Place : Bengaluru

Date: 15/1/2021

Dr. JAYASREE VAIDYANATHAN