CURRICULUM VITAE OF DR. MADAN KUMAR JHA

PRESENT POSITION: Professor (HAG), Land and Water Resources Engg.

SPECIALIZATION: Subsurface Hydrology

CONTACT ADDRESS: Agricultural and Food Engineering Department
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PERMANENT ADDRESS: C/o Prof. Jagannath Jha, Tirhut Colony, Madhubani
Dist. & P.O. - Madhubani, PIN: 847 211, Bihar, India

PERSONAL DATA

Date of Birth	**:**	25 December 1965
Sex	**:**	Male
Nationality	**:**	Indian
Marital Status	**:**	Married

EDUCATION

Exam/Degree	Board/Univ./Institute	Year	Division/Class	Major	Rank in Board/Univ.
Matriculation	Bihar School Examination Board, Patna, Bihar, India	1981	First Division	*Not applicable*	School Topper
Intermediate of Science (I.Sc.)	Bihar Intermediate Education Council, Patna, Bihar, India	1983	First Division	*Not applicable*	-
B.Tech.	Rajendra Agricultural University, Pusa, Bihar, India	1990	First Class with Distinction	Agricultural Engineering	Gold Medalist
M.Eng.	Asian Institute of Tech. (AIT), Bangkok, Thailand	1992	First	Soil & Water Engineering	Program Topper
Ph.D.	UGAS, Ehime University, Matsuyama, Japan	1996	*Not applicable*	Subsurface Hydrology	*Not applicable*

SCHOLASTIC LAURELS

(A) Awards/Honors

(1) **Institute Chair Professor Award-2022** by Indian Institute of Technology Kharagpur, West Bengal, India (August 2022).

(2) **Eminent Water Resources Scientist Award** by the Indian Water Resources Society (IWRS), Indian Institute of Technology Roorkee for excellent and significant achievements in the field of Water Resources Development and Management (June 2021).

(3) **Smt Savitri Chadha Memorial INC-IAH Award for Excellence in Groundwater Science** by the Indian National Chapter of International Association of Hydrogeologists, New Delhi for outstanding research contributions in the field of "Groundwater Hydrology" (June 2020).

(4) **Editor** of the most prestigious *Water Resources Research* journal published by the American Geophysical Union, USA (April 2021-December 2024).

(5) **Fellow** of the National Academy of Agricultural Sciences (NAAS), New Delhi (Jan. 2020).

(6) **Featured as Global Top 2% Scientists consecutively in 2020**, **2021**, and **2022** based on the studies carried out by Stanford University-Elsevier Analyst Group.

(7) **Expert Member of the Steering Committee** for "Centre of Excellence for Water-related Disaster Management in Kerala" located at the Centre for Water Resources Development and Management (CWRDM), Kozhikode with the financial support of the Kerala State Council for Science, Technology and Environment, Government of Kerala, India (October 2022).

(8) **Advisor for the Mangroves Wetland Project** "Scoping Study to Develop People Inclusive Livelihood based Governance Strategy for the Long-term Conservation of Mangrove Forests of Kerala", Kerala Forest Research Institute (KFRI), Thrissur, Kerala, India (October 2022).

(9) **Best Paper Award** by the Centre for Water Engineering & Management during International Conference on Water & Wastewater Management and Modeling (ICWWMM-2018), 16-17 January 2018, Central University of Jharkhand, Ranchi, India for the paper *"Field exploration for hydrogeologic characterization and performance evaluation of grain-size analysis methods"* by S. Biswal and M.K. Jha (January 2018).

(10) **Fellow** of the Indian Society of Agricultural Engineers (ISAE), New Delhi (February 2017).

(11) **Team Award** by the Indian Society of Agricultural Engineers, New Delhi (February 2017).

(12) **Best Paper Award (First Prize)** by the Indian Society of Agricultural Engineers (ISAE), New Delhi during 50th Annual Convention of ISAE, 19-21 January 2016, CAET, OUAT, Bhubaneswar, Odisha for the paper *"Hydraulic characterization of vadose zone: case study"* by S. Mahapatra and M.K. Jha (January 2016).

(13) **Member, Board of Governors (BOG)**, Darbhanga College of Engineering, Darbhanga, Bihar (01 November 2017-31 March 2021).

(14) **Member, Research Advisory Committee (RAC)** of ICAR-Indian Institute of Water Management (ICAR-IIWM), Bhubaneswar, Odisha (01 December 2015-30 November 2018).

(15) **External Reviewer** for the "National Commission for Scientific and Technological Research (CONICYT)", Chile (May 2013-October 2020).

(16) **External Reviewer** for the "Natural Sciences and Engineering Research Council of Canada (NSERC)", Canada (December 2020).

(17) **External Reviewer** for the "Ministry of Science and Technology (MOST)", Israel, (August 2020).

(18) **Advisor to ICAR-IIWM, Bhubaneswar and PDKV, Akola** on the construction and evaluation of artificial recharge structures in Odisha and Vidarbha regions of India under "Agri-Consortia Research Platform on Water", ICAR, New Delhi (June 2015-March 2020).

(19) **Editorial Board Member/Associate Editor** of *Scientific Reports* published by Nature Publishing Group (since June 2018).

(20) **Associate Editor** of *Groundwater Resources and Management* (specialty section of "Frontiers in Environmental Science") published by Frontiers, Switzerland (September 2016-May 2020).

(21) **Associate Editor** of *Hydrogeology Journal* published by Springer (Jan 2012-Feb 2016).

(22) **Executive Editor-in-Chief** of *International Agricultural Engineering Journal* published by the Asian Association for Agricultural Engineering, Beijing (March 2012-December 2016).

(23) **Section Editor** of *Journal of Groundwater Research* published by the Association of Global Groundwater Scientists (AGGS), ISM, Dhanbad, India (May 2013-April 2022).

(24) **Executive Editor** of *e-Journal of Geohydrology* published by the Indian National Chapter of International Association of Hydrogeologists (INC-IAH), New Delhi (Jan 2020-Dec 2021).

(25) **K. C. Das Memorial Award** by The Institution of Engineers (India), Odisha State Center, Bhubaneswar for the best paper entitled *"Artificial neural network modeling for groundwater level forecasting of a group of wells in a deltaic aquifer of Eastern India"* by S. Mohanty, A. Kumar, P. Panigrahi and M.K. Jha (February 2015).

(26) **Best Poster Award** by the Horticultural Society of North-East India, Nagaland during National Seminar on Sustainable Horticulture vis-à-vis Changing Environment, 26-28 February 2015, Nagaland University, Nagaland, India for the poster *"Development of soil conservation strategies in a hilly watershed using a GIS-based watershed model"* by A.K. Verma and M.K. Jha (February 2015).

(27) **Fellow** of the Indian Association of Hydrologists (IAH), Roorkee, India (October 2014).

(28) **Best Paper Award** by the American Academy of Sciences during Seventh International Conference on Environmental Science and Technology (ICEST-2014), 09-13 June 2014, Houston, Texas, USA for the paper *"Assessment of groundwater recharge using water-table fluctuation method and water balance model"* by S. Sahoo and M.K. Jha (June 2014).

(29) **Outstanding Book Award** by the Indian Society of Agricultural Engineers (ISAE), New Delhi for the book *"Hydrologic Time Series Analysis: Theory and Practice"* (Feb. 2014).

(30) **Banabihari Mohanty Memorial Award** by The Institution of Engineers (India), Odisha State Center, Bhubaneswar for the best paper entitled *"Simulation-optimization modeling for optimal management of groundwater in a well command of Eastern India"* by S. Mohanty, M.K. Jha and A. Kumar (February 2013).

(31) **Commendation Medal** by the Indian Society of Agricultural Engineers (ISAE), New Delhi for outstanding contributions in the field of "Soil and Water Engineering" (January 2013).

(32) **Prof. S.C. Puranic Award** by the Association of Geologists and Hydrogeologists (GEOFORUM), Maharashtra, India for the best paper entitled *"A hybrid neural network technique in modeling water table fluctuations"* by S. Sahoo and M.K. Jha (December 2012).

(33) **Fellow** of the Institution of Engineers India (IEI), Kolkata, West Bengal (July 2011).

(34) **Associate Editor** of *Journal of Agricultural Engineering* published by the Indian Society of Agricultural Engineers (ISAE), New Delhi (November 2010-December 2012).

(35) **Editor** of *Journal of Environmental Protection* published by Scientific Research Publishing, California, USA (since October 2010).

(36) **Editor** of *Journal of Water Resource and Protection* published by Scientific Research Publishing, California, USA (since September 2010).

(37) **Assistant Managing Editor** of *Journal of Spatial Hydrology* published by Spatialhydrology.com, Inc., Florida, USA (January 2010-December 2012).

(38) **K. C. Das Memorial Award** by The Institution of Engineers (India), Orissa State Center, Bhubaneswar for the best paper entitled *"Prediction of groundwater level in Kathajodi River basin using artificial neural network approach"* by S. Mohanty, M.K. Jha, A. Kumar, B.K. James and S.K. Jena (February 2009).

(39) **Shankar Memorial Award** by the Indian Society of Agricultural Engineers (ISAE), New Delhi for excellence in research in the field of Soil and Water Engineering (December 2008).

(40) **Associate Editor** of *International Agricultural Engineering Journal* published by the Asian Association for Agricultural Engineering (AAAE), Bangkok (July 2008-February 2012).

(41) **Fellow** of the Indian Water Resources Society (IWRS), Roorkee, India (July 2008).

(42) **Outstanding Book Award** by the Indian Society of Agricultural Engineers (ISAE), New Delhi for the book entitled *"Applications of Remote Sensing and GIS Technologies in Groundwater Hydrology: Past, Present and Future"* (December 2007).

(43) **International AMA-Shin-Norinsha-AAAE Young Researcher Award** by the Asian Association for Agricultural Engineering (AAAE), Bangkok (December 2005).

(44) **ISTE National Award for the Best M.Tech. Thesis Supervision in Agricultural Engineering for the year 2003 (First Prize)** by the Indian Society for Technical Education (ISTE), New Delhi for the thesis entitled *"Development of Software for Farm Drainage Design and Simulation using Visual BASIC"* (December 2003).

(45) **Best Paper Award** by the Indian Society of Agricultural Engineers (ISAE), New Delhi during 36th Annual Convention of ISAE, 28-30 January 2002, IIT Kharagpur, West Bengal for the paper *"Simulation modeling of solute transport through lateritic vadose zone"* by S. Behera, M.K. Jha and S. Kar (January 2002).

(46) **Editor** of *Research Journal of Chemistry and Environment* published by the International Congress of Chemistry and Environment, M.P., India (March 2004-March 2013).

(47) **Editorial Board Member** of *Journal of Spatial Hydrology* published by Spatialhydrology.com, Inc., Florida, USA (January 2005 – December 2009).

(48) **Editorial Board Member** of *International Agricultural Engineering Journal* published by the Asian Association for Agricultural Engineering, Bangkok (January 2003 – June 2008).

(49) **Distinguished Services Award** in the area of 'Soil and Water Engineering' for the year 1999-2000 by the Indian Society of Agricultural Engineers, New Delhi (January 2001).

(50) **University Gold Medal**, Rajendra Agricultural University, Pusa, Bihar for outstanding academic performance during the undergraduate program (May 1990).

(B) International and National Fellowships/Scholarships

(1) **JSPS Invitation Fellowship (Long-Term)** by the Japan Society for the Promotion of Science, Tokyo for doing collaborative research in Japan for **10 months** (2009-2010).

(2) **Alexander von Humboldt Fellowship** for postdoctoral research in Germany for **14 months** (July 2004 to August 2005).

(3) **DAAD Scholarship** for participation in the *International Summer School 2001*, Germany.

(4) **JSPS Research Fellowship** for postdoctoral research in Japan for **2 years** (1997 to 1999).

(5) **Monbusho Scholarship** for pursuing Ph.D. study at the United Graduate School of Agricultural Sciences, Ehime University, Japan from October 1993 to September 1996.

(6) **Full Postgraduate Scholarship** for pursuing M.Eng. study at Asian Institute of Technology (AIT), Bangkok from January 1991 to August 1992.

(7) **Merit Scholarship**, Rajendra Agricultural University, Pusa, Bihar in recognition of excellent results during successive semesters (July 1987 to December 1989).

(8) **Special State Merit Scholarship**, Government of Bihar in recognition of the commendable academic performance since matriculation (July 1982 to June 1987).

TEACHING AND RESEARCH EXPERIENCES

- **18 August 2016 ~ Present:** Professor(HAG) at Agricultural and Food Engineering Department, Indian Institute of Technology (IIT) Kharagpur, West Bengal, India.

  Responsibilities: To teach undergraduate and post-graduate students, supervise B.Tech., M.Tech. and Ph.D. students' research as well as carry out sponsored research and industrial consultancies, together with other departmental and institutional responsibilities.

- **11 June 2010 ~ 17 August 2016:** Professor (Land and Water Resources Engineering) at Agricultural and Food Engineering Department, Indian Institute of Technology (IIT) Kharagpur, West Bengal, India.

  Responsibilities: To teach undergraduate and post-graduate students, supervise B.Tech., M.Tech. and Ph.D. students' research as well as carry out sponsored research and industrial consultancies, together with other departmental and institutional responsibilities.

- **19 Aug. 2004 ~ 10 June 2010:** Associate Professor (Land and Water Resources Engineering) at Agricultural and Food Engineering Department, Indian Institute of Technology Kharagpur, West Bengal, India.

  Responsibilities: To teach undergraduate and post-graduate students, supervise B.Tech., M.Tech. and Ph.D. students' research as well as carry out sponsored research and industrial consultancies, together with other departmental and institutional responsibilities.

- **08 Dec. 1999 ~ 18 August 2004:** Assistant Professor (Land and Water Resources Engineering) at Agricultural and Food Engineering Department, Indian Institute of Technology Kharagpur, West Bengal, India.

  Responsibilities: To teach undergraduate and post-graduate students, supervise B.Tech., M.Tech. and Ph.D. students' research as well as carry out sponsored research and industrial consultancies, together with other departmental and institutional responsibilities.

- **Dec. 1997 ~ Nov. 1999:** Postdoctoral Fellow at the Kochi University, Nankoku-shi, Japan.

Responsibilities: To carry out studies on groundwater and seawater intrusion dynamics in the Konan basin of Kochi Prefecture, Japan, including field investigations and numerical modeling.

- **Sept. 1992 ~ Aug. 1993:** Research Associate at the Irrigation Engineering and Management (IREM) Program, Asian Institute of Technology (AIT), Bangkok, Thailand.

  Responsibilities: To prepare handouts for laboratory and field experiments, supervise field and laboratory experiments for Masters' students, assist in writing M.Eng. thesis, publish research papers, and prepare a technical report on Indian irrigation systems.

- **April 1991 ~ Aug. 1992:** Student Assistant in a research project sponsored by the German Agency for Technical Cooperation (GTZ), AIT, Bangkok, Thailand.

  Responsibilities: Daily observation of various meteorological data, analysis of the hydro-meteorological data, maintenance of the AIT weather station, and demonstration of the meteorological instruments to groups of trainees, Masters' students of AIT and other visitors.

ADMINISTRATIVE EXPERIENCE

- **Chairman, GATE** (Graduate Aptitude Test in Engineering), IIT Kharagpur (01 June 2019 to 31 May 2020).
- **Chairman, JAM** (Joint Admission Test for M.Sc.), IIT Kharagpur (01 June 2019 to 31 May 2020).
- **Chairman, CELC** (Commercial Establishment & Licensing Committee), IIT Kharagpur (01 January 2018 to 31 December 2021).
- **Chairman, KNCC** (Kazi Nazrul, Community Center), IIT Kharagpur (13 August 2018 to 31 December 2021).
- **Vice-Chairman, GATE** (Graduate Aptitude Test in Engineering), IIT Kharagpur (27 May 2017 to 31 May 2019).
- **Vice-Chairman, JAM** (Joint Admission Test for M.Sc.), IIT Kharagpur (27 May 2017 to 31 May 2019).
- **Prof.-in-Charge, Examination**, IIT Kharagpur (01 October 2013 to 30 September 2016).
- **Assistant Warden** of B. C. Roy Hall of Residence, IIT Kharagpur (July 2002 to June 2004).

PROFESSIONAL EXPERIENCE

- **Dec. 1996 ~ Nov. 1997:** Water Resources Engineer at Panya Consultants Co., Ltd., 22 Soi Ladprao 35, Ladprao Road, Jatujak, Bangkok 10900, Thailand.

  Responsibilities: Involved in the feasibility study of a Community Irrigation Development Project (CIDP) for the Royal Irrigation Department of Thailand funded by the World Bank, prepared a technical proposal for the Mae Song Irrigation System Design (one of the four sub-projects of CIDP) to be funded by the World Bank, performed hydraulic analysis of the PMF outflow into downstream channels at Kra Sieo and Bang Phra dams using MIKE 11 and prepared flood inundation maps, estimated engineering costs for various remedial works at Kra Sieo and Bang Phra dams, involved in the Environmental Impact Assessment (EIA) of Thailand Dam Safety Project and assisted in the preparation of several reports for this project ("Reassessment of Spillway Capacity and Detailed Design for Remedial Works").

- **Jan. 1998 ~ Dec. 2020:** Reviewer of the *International Agricultural Engineering Journal* published by the Asian Association for Agricultural Engineering (AAAE), Bangkok, Thailand (now Beijing, China).
- **September 2000:** Coordinated a national workshop on *Rainwater and Groundwater Management for Sustainable Rice Ecosystem* held on 25-26 September 2000 at IIT, Kharagpur, West Bengal, India. No. of Participants: 30.
- **Jan. 2001 ~ Present:** Reviewer of the *Water Resources Management* journal published by Springer, Germany.
- **Nov. 2005 ~ Present:** Reviewer of *Journal of Hydrologic Engineering*, *Journal of Irrigation and Drainage Engineering*, and *Journal of Hydraulic Engineering* published by the American Society of Civil Engineers (ASCE), USA.
- **Jan. 2006 ~ Present:** Reviewer of *Scientific Reports* (Nature Research), *Water Resources Research* (Wiley), *Journal of Hydrology* (Elsevier), *Hydrogeology Journal* (Springer), *Science of the Total Environment* (Elsevier), *Groundwater* (Wiley), *Environmental Earth Sciences* (Springer), *Journal of Environmental Management* (Elsevier), *Hydrological Sciences Journal* (Taylor & Francis), *Biosystems Engineering* (Elsevier), *Agricultural Water Management* ((Elsevier), and *Irrigation and Drainage* (Wiley).

PATENT GRANTED

- **Jha, M.K.** and Sarkar, A. (2022). ***An Improved Hand Pumping System***. Patent Granted (No. 387907/January 2022). Patent filed (No. 1386/KOL/2009) with the financial support from DST, New Delhi, India.

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- **Jha, M.K.** and Tiwary, P. (2012). ***DSS-IWRM:*** Indigenous and cost-effective Decision Support System for integrated water resources management (IWRM). It provides a pragmatic framework for IWRM implementation in developing countries and is adaptable to data-scarce conditions. Copyright Filed on 07.09.2012.
- **Jha, M.K.**, Pai, B.V. and Tiwary, P. (2009). ***GWARA:*** User-friendly software package for groundwater assessment and recharge analysis – Granted (L-34551/2009).
- **Jha, M.K.** and Samuel, M.P. (2009). ***GA-AquiAnalyzer:*** Innovative and unique groundwater software for analyzing time-drawdown and step-drawdown pumping test data by nonconventional optimization technique, Genetic Algorithm – Granted (SW-4232/2009).
- **Jha, M.K.** and Prakash, Om (2009). ***DrainSolver:*** Indigenous and user-friendly software package for the design and simulation of surface and subsurface drainage systems, computation of leaching requirements and design discharge, economic analysis of drainage systems, and the analysis of special drainage problems – Granted (SW-4231/2009).
- **Jha, M.K.** and Porwal, A. (2008). ***RainHarvester:*** User-friendly software package for the planning, design and analysis of rainwater harvesting systems – Granted (L-30948/2008).
- **Jha, M.K.** and Ganguli, P. (2007). ***AquiferManager:*** A comprehensive suite of analytical tools for forward and inverse modeling of groundwater systems – Granted (SW-3559/2007).
- **Jha, M.K.** and Abusaleh, Md. (2005). ***IrriScheduler:*** User-friendly software package for computing crop water requirements as well as irrigation scheduling under standard and actual crop-growing conditions using modern concepts – Granted (SW-1930/2005).

- **Jha, M.K.** and Tiwari, M.K. (2005). ***SISCASDE:*** Indigenous and easy-to-use software package for the computer-aided selection, design and evaluation of basic surface irrigation systems – Granted (SW-1920/2005).

INFRASTRUCTURE/LABORATORY AND COURSE DEVELOPMENT

- Developed ***Field Experimental Setup*** for the advanced study of flow and transport processes in lateritic vadose zones in relation to groundwater contamination by non-point source pollution.

- Developed ***Methodology (Scientific Framework)*** for systematic field investigations of vadose zones at basin/sub-basin scales that play a crucial role in sustainable water management.

- Developed state-of-the-art ***"Groundwater Hydrology Laboratory"*** and ***"Groundwater Flow and Pollution Modeling Laboratory"***, and modern ***"Field Water Management Laboratory"*** for quality teaching and research at UG and PG levels as well as for training.

- Strengthened teaching and research facilities in the field of "Soil and Water Engineering" through **DST-FIST** Program of DST, New Delhi and they are updated regularly.

- Designed and fabricated ***Mariotte Constant Head Devices*** for the cost-effective *in situ* determination of soil (vadose zone) hydraulic conductivity.

- Developed a new course entitled **"Modeling and Simulation for Agricultural Water Management"** (4 credits) for the B.Tech.(Hons.) and M.Tech.(LWRE) Programs of Agricultural and Food Engineering Department, IIT Kharagpur, India.

- Developed a new course entitled **"Groundwater Hydrology"** (4 credits) for the B.Tech.(Hons.) Program of Agricultural and Food Engineering Department, IIT Kharagpur, India.

- Developed a new course entitled **"Integrated Water Resources Management"** (3 credits) for the new M.Tech. Program on 'Water Management', School of Water Resources, IIT Kharagpur, India.

- Developed two e-courses: (i) **"Drainage Engineering"** (2 Credits), and (ii) **"Groundwater, Wells and Pumps"** (3 Credits) for B.Tech.(Agril. Engg.) sponsored by ICAR, New Delhi.

SPONSORED RESEARCH/CONSULTANCY PROJECTS

- **Principal Investigator** of the ICAR sponsored 'Agri-Consortia Research Platform on Water' project entitled "Development and Management of Integrated Water Resource in Different Agro-Ecological Regions of India". Duration: 17 December 2015 to 31 March 2021; Fund: Rs. 46.87294 lakh.

- **Principal Investigator** of the MHRD sponsored project entitled "Field Investigation and Numerical Modeling of Seawater Intrusion in a Coastal Basin of West Bengal, Eastern India" through *'Challenge Grant on Collaborative International Research'*. Duration: 15 July 2018 to 14 July 2021; Fund: Rs. 25.00 lakh.

- **Principal Investigator** of the consultancy project entitled "Design Vetting of Infiltration Galleries", Gannon Dunkerly and Co., Ltd., Kolkata, India. Duration: 15 December 2016 to 31 March 2023; Fund: Rs. 7.225 lakh.

- **Co-Principal Investigator** of the consultancy project entitled "Preparation of State-Specific Action Plan for Water Sector in West Bengal", Water Resources Investigation and

Development Department (WRIDD), Government of West Bengal, Kolkata, India. Duration: 12 April 2017 to 20 February 2019; Fund: Rs. 50.00 lakh.

- **Principal Investigator** of the MHRD sponsored project entitled "Geophysical and Hydrogeological Characterization of Aquifers and Artificial Recharge of Groundwater at IIT Kharagpur Campus for Sustainable Water Supply". Duration: 16 May 2014 to 15 May 2017; Fund: Rs. 100.00 lakh.

- **Principal Investigator** of the MHRD sponsored project entitled "Investigation of Groundwater Dynamics and Recharge Potential under Salient Crop Production Systems of Eastern India" under 'Sustainable Food Security through Technological Interventions for Production, Processing and Logistics'. Duration: 19 February 2014 to 31 March 2018; Fund: Rs. 33.10 lakh.

- **Co-Principal Investigator** of the ITRA project entitled "Improving Groundwater Levels and Quality through Enhanced Water Use Efficiency in Eastern Indian Agriculture". Duration: 20 September 2013 to 31 December 2018; Fund: Rs. 111.41 lakh.

- **Co-Principal Investigator** of the MHRD sponsored project entitled "Sustainable Food Security through Technological Interventions for Production, Processing and Logistics". Duration: 19 February 2014 to 31 March 2018; Fund: Rs. 2600.00 lakh.

- **Co-Principal Investigator** of the ICAR-NAIP project entitled "Development of e-Courses for B.Tech. (Agricultural Engineering)". Duration: 01 December 2011 to 31 March 2014; Fund: Rs. 78.11 lakh.

- **Co-Principal Investigator** of the ICAR-NAIP project entitled "Precision Farming Technologies based on Microprocessor and Decision Support Systems for Enhancing Input Application Efficiency in Production Agriculture". Duration: 01 January 2009 to 31 March 2014; Fund: Rs. 46.493 lakh.

- **Principal Investigator** of the consultancy project entitled "Planning and Design of Rainwater Harvesting Systems for Cement Grinding Unit, Purulia, West Bengal", Reliance Cement Company Pvt. Ltd., Mumbai, India. Duration: 04 February 2013 to 03 October 2013; Fund: Rs. 4.91575 lakh.

- **Principal Investigator** of the consultancy project entitled "Groundwater Exploration at Bengal College of Engineering and Technology Campus, Durgapur", Director (Admn.), Bengal College of Engineering and Technology, Durgapur, West Bengal, India. Duration: 07 June 2012 to 31 July 2012; Fund: Rs. 0.73034 lakh.

- **Principal Investigator** of the consultancy project entitled "Design of Irrigation Projects for Binpur-I and Binpur-II Blocks of Paschim Medinipur District", DM, Paschim Medinipur, West Bengal, India. Duration: 01 September 2009 to 31 December 2011; Fund: Rs. 3.5 lakh.

- **Principal Investigator** of the DST-FIST Project for "Strengthening Teaching and Research in Water Resources Development and Management". Duration: 01 September 2003 to 31 August 2008; Fund: Rs. 78.00 lakh.

- **Principal Investigator** of the ICAR sponsored project entitled "Artificial Recharge of Groundwater for Sustainable Water Resources Utilization in Midnapore District of West Bengal". Duration: 01 July 2002 to 30 June 2005; Fund: Rs. 10.69 lakh.

- **Co-Principal Investigator** of the MHRD sponsored project entitled "Rainwater Harvesting-cum-Artificial Groundwater Recharge for Sustainable Water Resources Management". Duration: 01 April 2001 to 31 March 2003; Fund: Rs. 10.00 lakh.

- **Co-Principal Investigator** of the MHRD sponsored project entitled "Rainwater Harvesting in Drought-Prone Areas". Duration: 01 April 2002 to 31 March 2004; Fund: Rs. 12.00 lakh.

- **Consultant** of the consultancy project "Development of Food Industrial Park", MATA Foundation, Manipur, India. Duration: March 2003 to Feb. 2004; Fund: Rs. 20.00 lakh.

- **Consultant** of the consultancy project "Preparation of Perspective Development Plan for Paschimanchal Unnayan Parishad", Government of West Bengal, West Bengal, India. Duration: January 2006 to March 2007; Fund: Rs. 11.00 lakh.

INTERNATIONAL COLLABORATION

- Research Collaboration and students exchange with "Graduate School of Agriculture, Kyoto University", Japan (February 2016- Present).

- Research Collaboration with "Institute for Water Management, Leibniz University Hannover", Germany (March 2016-Present).

- Research Collaboration with "Department of Infrastructure Engineering, University of Melbourne", Victoria, Australia (August 2015-November 2019).

- Research Collaboration with "Department of Hydrology, University of Bayreuth", Germany (July 2004-December 2007).

- "Coordinator" for developing research collaboration between IIT Kharagpur and University of California, Berkeley (UCB) (October 2011-April 2013).

INVITED LECTURES (India and Abroad)

(1) ***"IWRM: Key to Sustainable Water Resources Management"*** in the Webinar on "Water Resources Management for Sustainable Agriculture" held on the occasion of World Water Day, 22 March 2023 and organized by the Bihar Agricultural University, Sabour, Bhagalpur and the Academy of Natural Resource Conservation and Management (ANRCM), Lucknow, U.P., India.

(2) ***"Integrate d and Pragmatic Approach for Conjunctive Use Planning"*** in the Workshop on "Advance Applications of Remote Sensing and GIS in Natural Resources Management" held on 24 January-13 February 2023 and organized by the College of Agricultural Engineering and Technology, OUAT, Bhubaneswar, Odisha, India.

(3) ***"Sustainable Groundwater Management: Key to Earth's Survival"*** in the Short-Term Course "A Guide to Management of Sustainable Water Supply System: Special Emphasis on Breakdown Reduction in Rural Piped Water Supply Schemes and Operation Maintenance of Water Treatment Plants" held on 06-09 April 2022 and organized by the Public Health Engineering Department, Government of Bihar, Patna, India.

(4) ***"Sustainable Management of Groundwater Resources under Changing Climate"*** in the Kyoto University Wild & Wise Collaborative Learning Program "Transformation of Food, Life, and Environment in East Asia and Advanced Research" held on 18 December 2021-06 February 2022 and organized by the Graduate School/Faculty of Agriculture, Kyoto University, Japan in collaboration with 15 universities in Asia.

(5) ***"Water Conservation: Concept, Issues and Challenges"*** in the Short-Term Course "Design and Management of Sustainable Rural and Urban Water Supply System: Special Emphasis on Solar Energy Based Technologies and Water Conservation" held on 13-16 July 2019 and organized by Department of Civil Engineering, IIT Kharagpur, West Bengal, India.

(6) ***"Water Conservation Measures: Overview of Methods and Case Studies"*** in the Short-Term Course "Design and Management of Sustainable Rural and Urban Water Supply System: Special Emphasis on Solar Energy Based Technologies and Water Conservation" held on 13-16 July 2019 and organized by Department of Civil Engineering, IIT Kharagpur, West Bengal, India.

(7) ***"Sustainable Water Management in India: Challenges and Opportunities"*** in the conference "A Participatory Dialogue on Co-Creating Water Positive Communities" held on 15 December 2017 in Jaipur and organized by Ambuja Cement Foundation, Rajasthan.

(8) ***"Water Harvesting: Basic Concepts, Myths and Utility"*** in the Training Program on "Planning and Design of Rainwater Harvesting Structure and Utilization of Conserved Water through Micro-Irrigation System" held on 12-21 January 2016 and organized by Soil Conservation Training Centre, Soil Conservation Department, DVC, Hazaribag, Jharkhand, India.

(9) ***"Identification of Rainwater Harvesting Sites Using Geospatial Techniques: A Case Study"*** in the Training Program on "Planning and Design of Rainwater Harvesting Structure and Utilization of Conserved Water through Micro-Irrigation System" held on 12-21 January 2016 and organized by Soil Conservation Training Centre, Soil Conservation Department, DVC, Hazaribag, Jharkhand, India.

(10) ***"Demonstration of Indigenous Software for the Planning, Design and Analysis of Rainwater Harvesting Systems"*** in the Training Program on "Planning and Design of Rainwater Harvesting Structure and Utilization of Conserved Water through Micro-Irrigation System" held on 12-21 January 2016 and organized by Soil Conservation Training Centre, Soil Conservation Department, DVC, Hazaribag, Jharkhand, India.

(11) ***"Seepage Control in Ponds"*** in the Short-Term Course on "Foundation Course in Fisheries Engineering" held on 28 December 2015-01 January 2016 and organized by Agricultural & Food Engineering Department, IIT Kharagpur, West Bengal, India.

(12) ***"Seepage and Evaporation Control in Ponds and Reservoirs"*** in the Short-Term Course on "Engineering and Management in Fisheries and Aquaculture" held on 04-11 July 2014 and organized by Agricultural & Food Engineering Department, IIT Kharagpur, West Bengal, India.

(13) ***"Rainwater Harvesting and Artificial Groundwater Recharge: Emerging Tools for Mine Site Restoration"*** in the Short-Term Course on "Mine Closure Planning and Post Mining Mine Site Restoration: CSR-EMP Integration" held on 6-8 March 2014 and organized by Department of Mining Engineering, IIT Kharagpur, West Bengal, India.

(14) ***"Groundwater-Surface Water Interaction: Key to Sustainable Water Management"*** in the Workshop on "Indian Water Management in 21st Century (IWM-2011)" held at Indian Institute of Technology Bhubaneswar, Orissa, India, 27-29 December 2011.

(15) ***"Rainwater Harvesting: A Promising Tool for Ensuring Water Security"*** at the Kharagpur Local Center of the Institution of Engineers (India), Kharagpur, West Bengal, India, 30 August 2011.

(16) ***"Seepage Control in Ponds"*** in the Short-Term Course on "Engineering and Management in Fisheries and Aquaculture" held on 23-30 June 2011 and organized by Agricultural and Food Engineering Department, Indian Institute of Technology Kharagpur, West Bengal, India.

(17) ***"Dynamics of Seawater Intrusion in Coastal Aquifer Systems"*** and ***"Management Strategies for Seawater Intrusion Control"*** at State Water Investigation Directorate (SWID), Water Resource Investigation & Development Department, Government of West Bengal, Kolkata, India, 10 March 2011.

(18) ***"Role of Rainwater Harvesting in Water Crisis Mitigation"*** at Kochi University, Kochi, Japan, 14 December 2009.

(19) ***"Application of Remote Sensing and GIS Techniques to Groundwater Assessment"*** at Faculty of Environmental Science and Technology, Okayama University, Okayama, Japan, 12-13 November 2009.

(20) ***"Freshwater Scarcity: An Overview"*** at Ehime University, Matsuyama, Japan, 09-10 November 2009.

(21) ***"Artificial Recharge: A Promising Tool for Groundwater Protection"*** at Ehime University, Matsuyama, Japan, 09-10 November 2009.

(22) ***"Water Crisis: Myth or Reality?"*** in the International Seminar on "Overseas Training Course for Field Science 2009", Kochi University, Kochi, Japan, 23 October 2009.

(23) ***"Cost-effective Methods for Sustainable Groundwater Management"*** in the Alexander von Humboldt Colloquium on Engineering Sciences in India and Germany: University versus Industry – Cooperation or Competition? 31 October-02 November 2008, New Delhi, India.

(24) ***"Application of GIS in Groundwater Modeling: Opportunities and Challenges"*** at the Geological Survey of India Training Institute (GSITI), Hyderabad, India, 13 April 2007.

(25) ***"Application of GIS in Groundwater Modeling: Salient Case Studies"*** at the Geological Survey of India Training Institute (GSITI), Hyderabad, India, 13 April 2007.

(26) ***"Micro-Irrigation Methods"*** and ***"On-Farm and Off-Farm Water Harvesting and Management Methods"*** in the Training Program on "Watershed Management and Restoration Measures" held on 22-27 June 2006 and organized by the Agricultural and Food Engineering Department, Indian Institute of Technology Kharagpur, West Bengal, India.

(27) ***"Surface Water-Groundwater Interaction: Key to Sustainable Management of Water Resources Systems"*** at the Department of Geo-Ecology, University of Bayreuth, Germany, 19 May 2005.

(28) ***"Role of Genetic Algorithm in Aquifer Management"*** at the Department of Hydrology, University of Bayreuth, Germany, 8 November 2004.

(29) ***"Optimization of Well Parameters by Genetic Algorithm"*** in the QIP Short-Term Course on "Soft Computing Tools in Civil Engineering" held on 10-16 November 2003 and organized by the Department of Civil Engineering, Indian Institute of Technology Kharagpur, West Bengal, India.

(30) ***"Application of Genetic Algorithm in Aquifer Analysis"*** in the QIP Short-Term Course on "Soft Computing Tools in Civil Engineering" held on 10-16 November 2003 and organized by the Department of Civil Engineering, Indian Institute of Technology Kharagpur, West Bengal, India.

(31) ***"Sustainable Water Resources Management: Where Are We Heading?"*** in the World Food Day Seminar held on 22 November 2002 and organized by the Food Engineering Society, Kharagpur, West Bengal, India.

(32) ***"Watershed Development and Management: Modern Concepts and Challenges"*** and ***"Computer Application in Watershed Development and Management"*** in the Workshop for Practicing Engineers and Officers held on 11-13 July 2002 and organized by the Purulia Zilla Parishad, Purulia, West Bengal, India.

(33) ***"Possibility of Modern Agricultural Technologies in India"*** in the International Summer School held on 23 July-04 August 2001 at the Goettingen University, Germany. Financial Support by the DAAD, Germany.

(34) ***"Watershed Management and Wasteland Development"*** in the Officers' Training Program held on 21-30 June 2000 and organized by the Continuing Education Programme (CEP) of Indian Institute of Technology Kharagpur, West Bengal, India.

SHORT COURSE/TRAINING

(i) Topic : *Integrated Agricultural Engineering* (23 July - 04 August 2001)

Venue : Vechat and Goettingen, Germany.

Organizers: Institute of Agricultural Engineering of the Goettingen University, Research Centre for Animal Production and Technology (FOSVWE), and Centre for Tropical and Subtropical Agriculture and Forestry (CeTSAF), Germany.

(ii) Topic : *Planning and Design of Pumping Works* (19-30 August 1992)

Venue : Asian Institute of Technology (AIT), Bangkok, Thailand.

Organizers: Continuing Education Center (CEC), AIT, Bangkok, Thailand and the EBARA Corporation, Tokyo, Japan.

THESIS

- **Ph.D. dissertation** on "Studies on Artificial Recharge of Alluvial Aquifer: An Application to the Takaoka Groundwater Basin, Tosa City, Japan".
- **Master thesis** on "Studies on Mole Drainage in Bangkok Clay Soils".
- **Undergraduate thesis** on "Irrigation-cum-Drainage Planning for Pusa-Deopar *Chaur*".

SUPERVISION OF STUDENTS' RESEARCH

Guided: Ph.D.: 16, M.Tech.: 56, B.Tech.: 10

Under Guidance: Ph.D.: 05, M.Tech.: 02

UNDERGRADUATE/POSTGRADUATE COURSES OFFERED

Subject No.	Subject Name	L-T-P/Credit	Period
At Undergraduate Level			
AG60863	Pumping Systems	3-0-0/3	2003-2010
AG60864	Advanced Groundwater Hydrology	3-0-0/3	2003-2010
AG40011	Tubewells and Pumps	3-0-0/3	2008
At Postgraduate Level			
AG60044	Advanced Groundwater Hydrology	3-1-0/4	2000 onward
AG60170	Modeling and Simulation for Agricultural Water Management	3-1-0/4	2011 onward
AG69037	Hydrological Systems Lab.	0-0-3/2	2011 onward
AG69024	On-Farm Water Management Lab.	0-0-3/2	2017-2018
AG60013	On-Farm Irrigation Engineering	3-0-0/3	2000-2004
AG60043	Pumping Systems	3-0-0/3	2000-2009
12866/AG60104	On-Farm Water Management	3-0-0/3	2000-2004
AG69009	On-Farm Irrigation Engineering Lab.	0-0-3/2	2000-2004
AG69021	Pumping Systems Lab.	0-0-3/2	2000-2009
AG69010	Groundwater Hydrology Lab.	0-0-3/2	2000-2010
12870	On-Farm Water Management Lab.	0-0-3/2	2000-2003
AG69001	Seminar-I	0-0-2/1	2006 and 2007

RESEARCH ACTIVITIES

- Basin-wide numerical simulation-cum-optimization modeling and field investigation (quantity and quality) of inland and coastal aquifer systems, including recharge and seawater intrusion analyses for the efficient utilization of water resources in diverse agro-climatic and hydrogeologic regions.
- Conjunctive Use planning and management; Assessment of groundwater vulnerability and pollution risk.
- Planning, design and techno-economic feasibility of Rainwater Harvesting (RWH) and Managed Aquifer Recharge (MAR) for sustainable water management.
- Application of Geospatial (RS and GIS) and Multicriteria Decision Analysis (MCDA) techniques for the integrated planning and management of groundwater and surface water resources (both quantity and quality).
- Application of AI/ML and hybrid soft-computing techniques in Groundwater Hydrology.
- Evaluation of climate change and socio-economic change impacts on surface water systems and groundwater systems (inland and coastal).
- Groundwater-Surface Water and Tide-Aquifer interactions: field investigation as well as forward and inverse modeling using real-world data.
- Field investigation and numerical modeling of flow and transport processes in vadose-zone systems in relation to groundwater recharge and contamination.
- Evaluation of conventional and emerging optimization techniques for the estimation of aquifer and well parameters from aquifer-test data.

PROFESSIONAL AFFILIATION

- **Member** of the International Association of Hydrogeologists (IAH), U.K. (No. 109741).
- **Member** of the American Geophysical Union (AGU), USA (No. 1156466).
- **Member** of the International Water Association (IWA), U.K. (No. 1630911).
- **Member** of the International Association for Hydro-Environment Engineering and Research (IAHR), Spain (No. 64908).
- **Life Member** of the International Commission of Agricultural and Biosystems Engineering (CIGR), Japan.
- **Member** of the International Association of Hydrological Sciences (IAHS), U.K. (No. 8363).
- **Member** of the European Water Resources Association (EWRA), Greece (No. 00990061).
- **Life Member** of the Asian Association for Agricultural Engineering (AAAE), Beijing, China (LM-095).
- **Life Member** of the Institution of Engineers India (IEI), Kolkata, India (F-116118-7).
- **Life Member** of the Indian Water Resources Society (IWRS), Roorkee, India (F 08-1246).
- **Life Member** of the Association of Global Groundwater Scientists (AGGS), Coimbatore, India (LM-AGGS-016).
- **Life Member** of the Indian Association of Hydrologists (IAH), Roorkee, India (FM-326).
- **Life Member** of the Indian Society for Hydraulics (ISH), Pune, India (LM-1190).
- **Life Member** of the Indian Society of Agricultural Engineers (ISAE), New Delhi (LM-7411).
- **Life Member** of the Indian Association of Soil and Water Conservationists, Dehradun, India (LM-804).
- **Life Member** of the Indian Science Congress Association, Kolkata, India (No. L17430).
- **Life Member** of the Association of Agrometeorologists, Anand, India (LM-1454).
- **Life Member** of the Indian Society for Technical Education (ISTE), New Delhi (LM-40867).
- **Life Member** of the National Environmental Science Academy (NESA), New Delhi, India (LM-1076).
- **Life Member** of the Indian JSPS Association, Kerala, India (LM-045/2015).
- **Life Member** of the AIT Alumni Association, Bangkok, Thailand (No. II-03-A92).

LANGUAGES: English, Hindi, Maithili (mother tongue), and Japanese (working).

REFERENCES

1. Professor V. P. Singh
   Distinguished Professor, Dept. of Biological and Agricultural Engineering & Zachry Department of Civil Engineering, Texas A&M University, Scoates Hall, 2117 TAMU, Texas 77843-2117, USA
   E-mail: vsingh@tamu.edu
2. Professor C. S. P. Ojha
   Dept. of Civil Engineering
   IIT Roorkee, Roorkee – 247 667, Uttarakhand, India
   E-mail: cojhafce@iitr.ac.in

Salient Achievements of Doctoral and Postdoctoral Research

The topic of my Ph.D. study was *"Studies on Artificial Recharge of Alluvial Aquifer: An Application to the Takaoka Groundwater Basin, Tosa City, Japan".* This study was based on a real-world overdraft problem in a groundwater basin of Tosa City, Kochi Prefecture, Japan. **Both the field investigations and simulation modeling studies were carried out, which was a pioneering work in Kochi Prefecture**. The results of the study revealed the dynamics of groundwater quantity and quality, which in turn provided insights into the complex hydrogeologic processes of the Takaoka groundwater basin. Out of four possible artificial recharge techniques simulated, two artificial recharge techniques were found to be effective and promising for avoiding the overdraft problem, and thereby ensuring sustainable groundwater utilization in the basin. **The findings of this study proved very useful and valuable to the concerned decision makers** (local as well as provincial). During the three-year study period, several discussions were also held with the concerned local and provincial authorities from time to time. They highly appreciated the research work, **which helped them to formulate management strategies for efficient and long-term groundwater utilization in the Takaoka basin. Furthermore, the concerned authorities have also implemented some of the recommended remedial measures for sustainable groundwater management in the basin.** Thus, the outcomes of my Ph.D. study are of great practical importance and have direct socio-scientific impacts. **In addition, four papers were published in international journals of repute** and the research work was also presented in several national seminars in Japan and in international conferences abroad.

I was also awarded the prestigious JSPS fellowship by the Government of Japan for doing postdoctoral research on the topic "*Studies on Groundwater Movement and Seawater Intrusion in Kochi Plain"* for two years. **This study served as a model work in Kochi Prefecture, Japan.** It mainly focused on the intensive field investigations and problem analysis for enhancing the groundwater withdrawal from the Konan groundwater basin to meet the growing industrial demand without any detrimental environmental impacts. The intensive field experimentation, observations, and data analyses provided insights about the dynamics of groundwater flow in the study area. Being a coastal basin, the complex and often irreversible seawater intrusion process was also critically analyzed, together with inverse modeling. **The results of this study provided a strong basis for developing guidelines and strategies for sustainable management of the scarce and declining groundwater resource of the study area.** During the two-year study period, the results were discussed from time to time with the concerned decision-makers. The results of the postdoctoral study proved to be of high practical value and utility. The recommended preventive measures for minimizing or averting the seawater intrusion problem are also of immense importance for practicing water resources engineers and hydrogeologists. **I am proud to mention that based on the findings of my postdoctoral study, the concerned authorities of Kochi Prefecture prepared a plan to harness the scarce groundwater resource in a sustainable manner. Some of the suggested scientific measures to augment groundwater resources and to control seawater intrusion have been implemented by the concerned authorities.** It is also worth mentioning that the first paper based on this study was accepted without any modifications for publication in a renowned international journal *'Water Resources Management'*. The second paper based on the postdoctoral research has also been published in this journal and the third paper has been published in another reputed international journal *'Hydrogeology Journal'*. The postdoctoral work was also presented in three international conferences abroad and four national seminars in Japan as well as two conferences in India.

In a nutshell, the achievements of my doctoral and postdoctoral research work are of utmost practical and academic importance, which have significantly and directly contributed to the long-term benefits of society and mankind.

List of Publications

(A) In Peer-Reviewed Journals: 142

International Journal Papers: 127

1. Singh, L.K., **Jha, M.K.** and Pandey, M. (2023). *Spatiotemporal variability and trends in the rainfall and temperature of a sub-tropical region of Eastern India and their implications*. Pure and Applied Geophysics, Springer, https://doi.org/10.1007/s00024-023-03238-6. **Impact Factor: 2.327**

2. Mahapatra, S. and **Jha, M.K.** (2022). *Environmental flow estimation for regulated rivers under data-scarce condition*. Journal of Hydrology, Elsevier, 614, 128569, https://doi.org/10.1016/j.jhydrol.2022.128569. **Impact Factor: 6.731**

3. Mohan, C., Western, A.W., **Jha, M.K.** and Wei, Y. (2022). *Global assessment of groundwater stress vis-à-vis sustainability of irrigated food production*. Sustainability, MDPI, 14, 16896, https://doi.org/10.3390/su142416896. **Impact Factor: 4.089**

4. Jenifer, M.A. and **Jha, M.K.** (2022). *A novel GIS-based modeling approach for evaluating aquifer susceptibility to anthropogenic contamination*. Sustainability, MDPI, 14, 4538, https://doi.org/10.3390/su14084538. **Impact Factor: 4.089**

5. Boumaiza, L., Walter, J., Chesnaux, R., Lambert, M., **Jha, M.K.**, Wanke, H., Brookfield, A., Batelaan, O., Galv~ao, P., Laftouhi, N.-E. and Stumpp, C. (2022). *Groundwater recharge over the past 100 years: Regional spatiotemporal assessment and climate change impact over the Saguenay-Lac-Saint-Jean region, Canada*. Hydrological Processes, Wiley, https://doi.org/10.1002/hyp.14526. **Impact Factor: 3.784**

6. Murasingh, S., Kuttippurath, J., Raj, S., **Jha, M.K.**, Varikoden, H. and Debnath, S. (2022). *Trends and variability of rainfall in Tripura state of India in 1986–2019 and key drivers*. Pure and Applied Geophysics, Springer, https://doi.org/10.1007/s00024-022-02965-6. **Impact Factor: 2.327**

7. Biswal, P., Swain, D.K. and **Jha, M.K.** (2022). *Straw mulch with limited drip irrigation influenced soil microclimate in improving tuber yield and water productivity of potato in subtropical India*. Soil & Tillage Research, Elsevier, 223, 105484; https://doi.org/10.1016/j.still.2022.105484. **Impact Factor: 7.829**

8. Murasingh, S., Kuttippurath, J., Dash, S.S., Raj, S., Remesan, R., **Jha, M.K.** and Kumar, P. (2022). *Long-term trends and projections of hydrological fluxes under RCP climate change scenarios for a mountainous river catchment of northeast India*. Journal of Water and Climate Change, IWA, doi: 10.2166/wcc.2022.424. **Impact Factor: 2.803**

9. Roshni, T., Choudhary, S., **Jha, M.K.**, Ghorbani, M.A. and Wable, P.S. (2022). *Management of groundwater drought risk by reliability theory and copula model in Sina basin, India.* Sustainable Water Resources Management, Springer, 8:23, https://doi.org/10.1007/s40899-022-00620-5.

10. Mahapatra, S. and **Jha, M.K.** (2021). *Modeling soil moisture and flow dynamics of variably-saturated heterogeneous lateritic porous media under Wheat crop*. Journal of Irrigation and Drainage Engineering, ASCE, 147(11): 04021049, https://doi.org/10.1061/(ASCE)IR.1943-4774.0001621. **Impact Factor: 1.976**

11. Jenifer, M.A., **Jha, M.K.** and Khatun, A. (2021). *Assessing multi-criteria decision analysis models for predicting groundwater quality in a river basin of South India*. Sustainability, MDPI, 13(12), 6719, https://doi.org/10.3390/su13126719. **Impact Factor: 4.089**

12. Mohapatra, J.B., Jha, P., **Jha, M.K.** and Biswal, S. (2021). *Efficacy of machine learning techniques in predicting groundwater fluctuations in agro-ecological zones of India*. Science of the Total Environment, Elsevier, 785, 147319; https://doi.org/10.1016/j.scitotenv.2021.147319. **Impact Factor: 10.237**

13. Singh, L.K., **Jha, M.K.** and Chowdary, V.M. (2021). *Planning rainwater conservation measures using geospatial and multi-criteria decision making tools*. Environmental Science and Pollution Research, Springer, 28: 1734-1751, https://doi.org/10.1007/s11356-020-10227-y. **Impact Factor: 5.053**

14. Halder, S., Dhal, L. and **Jha, M.K.** (2021). *Investigating groundwater condition and seawater intrusion status in coastal aquifer systems of Eastern India*. Water, MDPI, 13(14), 1952; https://doi.org/10.3390/w13141952. **Impact Factor: 3.628**

15. Jenifer, M.A. and **Jha, M.K.** (2021). *Assessment of precipitation trends and its implications in the semi-arid region of Southern India*. Environmental Challenges, Elsevier, 5: 100269, https://doi.org/10.1016/j.envc.2021.100269.

16. Kuttippurath, J., Murasingh, S., Stott, P.A., Sarojini, B.B., **Jha, M.K.**, Kumar, P., Nair, P.J., Varikoden, H., Raj, S., Francis, P.A. and Pandey, P.C. (2021). *Observed rainfall changes in the past century (1901-2019) over the wettest place on Earth*. Environmental Research Letters, IOP Publishing, 16(2), 024018; https://doi.org/10.1088/1748-9326/abcf78. **Impact Factor: 6.947**

17. Biswal, P., Swain, D.K., **Jha, M.K.**, Mohan, G. and Matsuda, H. (2021). *Development of irrigation regime of limited and unlimited water supply for satisfactory Rice yield*. Journal of Agronomy & Agricultural Science, 4: 028, http://dx.doi.org/10.24966/AAS-8292/100028. **Impact Factor: 1.040**

18. **Jha, M.K.**, Shekhar, A. and Jenifer, M.A. (2020). *Assessing groundwater quality for drinking water supply using hybrid fuzzy-GIS-based water quality index*. Water Research, Elsevier, 179, 115867; https://doi.org/10.1016/j.watres.2020.115867. **Impact Factor: 13.847**

19. **Jha, M.K.**, Singh, L.K., Nayak, G.K. and Chowdary, V.M. (2020). *Optimization modeling for conjunctive use planning in Upper Damodar River basin, India*. Journal of Cleaner Production, Elsevier, 273, 123098; https://doi.org/10.1016/j.jclepro.2020.123098. **Impact Factor: 11.016**

20. Uniyal, B., **Jha, M.K.**, Verma, A.K. and Anebagilu, P.K. (2020). *Identification of critical areas and evaluation of best management practices using SWAT for sustainable watershed management*. Science of the Total Environment, Elsevier, 744, 140737; https://doi.org/10.1016/j.scitotenv.2020.140737. **Impact Factor: 10.237**

21. **Jha, M.K.**, Peralta, R.C. and Sahoo, S. (2020). *Simulation-optimization for conjunctive water resources management and optimal crop planning in Kushabhadra-Bhargavi River Delta of Eastern India.* International Journal of Environmental Research and Public Health, MDPI, 17(10), 3521; https://doi.org/10.3390/ijerph17103521. **Impact Factor: 4.614**

22. Mahapatra, S., **Jha, M.K.**, Biswal, S. and Senapati, D. (2020). *Assessing variability of infiltration characteristics and reliability of infiltration models in a tropical sub-humid*

region of India. Scientific Reports, Nature Research, 10:1515, https://doi.org/10.1038/s41598-020-58333-8. **Impact Factor: 4.996**

23. Sireesha, C., Roshni, T. and **Jha, M.K.** (2020). *Insight into the precipitation behavior of gridded precipitation data in the Sina basin*. Environmental Monitoring and Assessment, Springer, 192: 729, https://doi.org/10.1007/s10661-020-08687-3. **Impact Factor: 3.420**

24. Kumar, D., Roshni, T., Singh, A., **Jha, M.K.** and Samui, P. (2020). *Predicting groundwater depth fluctuations using deep learning, extreme learning machine and Gaussian process: a comparative study*. Earth Science Informatics, Springer, 13: 1237-1250, https://doi.org/10.1007/s12145-020-00508-y. **Impact Factor: 2.447**

25. Roshni, T., **Jha, M.K.** and Drisya, J. (2020). *Neural network modeling for groundwater-level forecasting in coastal aquifers*. Neural Computing and Applications, Springer, 32: 12737-12754, https://doi.org/10.1007/s00521-020-04722-z. **Impact Factor: 5.130**

26. Roshni, T., Nayahi1, J.V., **Jha, M.K.**, Nehar, M., Sourav, C. and Wable, P.S. (2020). *Clustering of groundwater wells and spatial variation of groundwater recharge in Sina Basin, India*. Asian Journal of Water, Environment and Pollution, IOS Press, 17(4): 11-21, DOI 10.3233/AJW200046. **SJR: 0.192**

27. Machiwal, D., **Jha, M.K.** and Gupta, A. (2020). *Development of a rainfall Stability Index using probabilistic indicators*. Ecological Indicators, Elsevier, 115, https://doi.org/10.1016/j.ecolind.2020.106406. **Impact Factor: 6.643**

28. Singh, L.K., **Jha, M.K.** and Chowdary, V.M. (2020). *Evaluation of water demand and supply under varying meteorological conditions in Eastern India and mitigation strategies for sustainable agricultural production*. Environment, Development and Sustainability, Springer, https://doi.org/10.1007/s10668-020-00619-y. **Impact Factor: 3.972**

29. Singh, L.K., **Jha, M.K.** and Chowdary, V.M. (2020). *Application of catastrophe theory to spatial analysis of groundwater potential in a sub-humid tropical region: A hybrid approach*. Geocarto International, Taylor & Francis, https://doi.org/10.1080/10106049.2020.1737970. **Impact Factor: 3.883**

30. **Jha, M.K.** (2020). *Sustainable groundwater management in India: Current status, challenges and future prospect*. E-Journal of Geohydrology, INC-IAH, 1(1): 1-11.

31. Panda, K.P., Upadhyay, A., **Jha, M.K.** and Sharma, S.P. (2020). *Mapping of laterite zones using 2D electrical resistivity tomography survey in parts of Paschim Medinipur, West Bengal, India: An approach for artificial groundwater recharge*. Journal of Earth System Science, Springer, 129: 119, https://doi.org/10.1007/s12040-020-01390-4. **Impact Factor: 2.045**

32. Ghosh, M., Swain, D.K., **Jha, M.K.**, Tewari, V.K. and Bohra, A. (2020). *Optimizing Chlorophyll Meter (SPAD) reading to allow efficient Nitrogen use in rice and wheat under rice-wheat cropping system in Eastern India*. Plant Production Science, Taylor & Francis, 23(3): 270-285, https://doi.org/10.1080/1343943X.2020.1717970. **Impact Factor: 2.465**

33. Ghosh, M., Swain, D.K., **Jha, M.K.** and Tewari, V.K. (2020). *Chlorophyll Meter-based Nitrogen management in a rice-wheat cropping system in Eastern India*. International Journal of Plant Production, Springer, 14: 355-371, https://doi.org/10.1007/s42106-020-00089-2. **Impact Factor: 2.168**

34. **Jha, M.K.**, Mahapatra, S., Mohan, C. and Pohshna, C. (2019). *Infiltration characteristics of lateritic vadose zones: Field experiments and modeling.* Soil & Tillage Research, Elsevier, 187: 219-234. **Impact Factor: 7.829**

35. Mahapatra, S. and **Jha, M.K.** (2019). *On the estimation of hydraulic conductivity of layered vadose zones with limited data availability*. Journal of Earth System Science, Springer, 128:75, https://doi.org/10.1007/s12040-019-1101-1. **Impact Factor: 2.045**

36. Roshni, T., **Jha, M.K.**, Deo, R.C. and Vandana, A. (2019). *Development and evaluation of hybrid artificial neural network architectures for modeling spatio-temporal groundwater fluctuations in a complex aquifer system*. Water Resources Management, Springer, 33(7): 2381-2397. **Impact Factor: 4.415**

37. Uniyal, B., Dietrich, Jörg, Vua, N.Q., **Jha, M.K.** and Arumí, J.L. (2019). *Simulation of regional irrigation requirement with SWAT in different agro-climatic zones driven by observed climate and two reanalysis datasets.* Science of the Total Environment, Elsevier, 649: 846-865. **Impact Factor: 10.237**

38. Machiwal, D., **Jha, M.K.**, Singh, V.P. and Mohan, C. (2018). *Assessment and mapping of groundwater vulnerability to pollution: Current status and challenges.* Earth-Science Reviews, Elsevier, 185: 901-927. **Impact Factor: 14.424**

39. Jenifer, M.A. and **Jha, M.K.** (2018). *Comprehensive risk assessment of groundwater contamination in a weathered hard-rock aquifer system of India.* Journal of Cleaner Production, Elsevier, 201: 853-868. **Impact Factor: 11.016**

40. Singh, L.K., **Jha, M.K.** and Pandey, M. (2018). *Framework for standardizing less data-intensive methods of reference evapotranspiration estimation.* Water Resources Management, Springer, 32(13): 4159-4175. **Impact Factor: 4.415**

41. Panda, K.P., Sharma, S.P. and **Jha, M.K.** (2018). *Mapping lithological variations in a river basin of West Bengal, India using electrical resistivity survey: implications for artificial recharge.* Environmental Earth Sciences, Springer, 77:626, https://doi.org/10.1007/s12665-018-7813-8. **Impact Factor: 3.152**

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