Dr. PUSHPENDRA KUMAR SINGH

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Pushpendra Kumar Singh - Google Scholar

Professional and Education Qualifications:

2001 **Bachelor of Technology (Agril. Engg),** CSAUA&T, Kanpur, India. **(Chancellor Gold Medal; First Division, 8.17/10).**
2003 **Master of Technology** (Soil & Water Cons. Engg.), GBPUA&T, Pantnagar, India**. (First with Distinction; 8.47/10.0).**
2007 **Doctor of Philosophy**, (WRD), IIT Roorkee India.

Professional Positions Held:

- April 2024 -Till the date — Associate Professor, Sardar Vallabhbhai Patel University of Agriculture & Technology Meerut, UP
- April 2023 – April, 2024 — Scientist E, National Institute of Hydrology, Roorkee
- August 2018 – April, 2023 — Scientist D, National Institute of Hydrology, Roorkee
- July 2015 – August 2018 — Scientist C, National Institute of Hydrology, Roorkee
- June 2009 – July 2015 — Assistant Professor, Anand Agricultural University Anand

Technical Papers: International: 37, Citations: 1124, H-index 17,

1. Singh, V., Bansal, J. K., Rani, D., **Singh, P. K.**, Nema, M. K., Singh, S. K., & Jain, S. K. (2024). Data assimilation with machine learning for constructing gridded rainfall time series data to assess long-term rainfall changes in the northeastern regions in India. *Journal of Water and Climate Change*, jwc2024644.
2. Chatterjee, D., **Singh, P. K.,** Singh, D., & Singh, V. P. (2024). A novel partitioning of gross primary production and water use efficiency for sustaining water and food security using Budyko hypothesis. *Science of The Total Environment*, 169283. [IF= 9.8].
3. Swagatika, S., Paul, J. C., Sahoo, B. B., Gupta, S. K., & **Singh, P. K.** (2024). Improving the forecasting accuracy of monthly runoff time series of the Brahmani River in India using a hybrid deep learning model. *Journal of Water and Climate Change*, *15*(1), 139-156.
4. Swagatika, S., Paul, J. C., Sahoo, B. B., Gupta, S. K., & **Singh, P. K.** (2023). Improving the forecasting accuracy of monthly runoff time series of the Brahmani River in India using a hybrid deep learning model. *Journal of Water and Climate Change*, jwc2023487.
5. Chatterjee, D., Singh, D., **Singh, P. K.,** Fohrer, N., & Singh, B. B. (2023). Performance evaluation of different gridded precipitation and CMIP6 model products with gauge observations for assessing rainfall variability under the

historical and future climate change scenario over a semi-arid catchment, India. **Physics and Chemistry of the Earth, Parts A/B/C, 103433. [IF: 3.7]**

6. Pooja Patle, **P.K. Singh,** Ishtiyaq Ahmad, Yutaka Matsuno, Mansoor Leh, Surajit Ghosh **(2023).** Spatio-temporal estimation of green and blue water consumptions and water and land productivity using satellite remote sensing datasets and WA+ framework: A case study of the Mahi Basin, India. **Vol. 277**, 108097, **Agricultural Water Management, Journal (Elsevier), [IF: 6.611.** https://doi.org/10.1016/j.agwat.2022.108097.
7. Nirmal Kumar, Sudhir Kumar Singh, **Pushpendra K. Singh**, Dilip Kumar Gautam, Pooja Patle, H.K. Pandey, Pankaj Chauhan **(2023).** Water accounting of a trans-boundary river basin using satellite observations and WA+ framework. **Physics and Chemistry of the Earth, Parts A/B/C**, **(Elsevier), [IF: 3.311] Vol. 129**,103343, https://doi.org/10.1016/j.pce.2022.103343.
8. Vishal Singh**, Pushpendra Kumar Singh,** Sanjay Kumar Jain, Sharad Kumar Jain, Christophe Cudennec, Tim Hessels. **(2022).** Examining evaporative demand and water availability in recent past for sustainable agricultural water management in India at sub-basin scale. **Journal of Cleaner Production (Elsevier) [IF – 11.072]**. **Vol. 346**; DOI: 10.1016/j.jclepro.2022.130993.
9. Singh, V.G., Singh, S.K., Kumar, N., Kumar, P., Gupta, P.K., **Singh, P.K**., Gašparović, M., Ray, R.L. and Saito, O., **(2022).** Water Accounting Using Satellite Products and Water Accounting Plus Framework in a Semi-Arid Betwa River Basin, India. ***Water*, *14*(21), MDPI*) [IF – 3.53]**. p.3473.
10. Karan, K., Singh, D., **Singh, P.K.,** Bharati, B., Singh, T.P. and Berndtsson, R., **(2022).** Implications of future climate change on crop and irrigation water requirements in a semi-arid river basin using CMIP6 GCMs. ***Journal of Arid Land, (Springer)* [IF – 2.807]**. pp.1-24.
11. **Singh, P. K.,** Jain, S. K., Mishra, P.K., and Goel, M. K. (2022): An assessment of water consumption patterns and land productivity and water productivity using WA+ framework and satellite data inputs. **Physics and Chemistry of the Earth, Parts A/B/C**, **(Elsevier), *[IF: 3.311], Vol. 126;*** https://doi.org/10.1016/j.pce.2021.103053.
12. **Singh, P. K.,** Dey, P., Jain, S. K., and Mujumdar, P. P. (2020): Hydrology and water resources management in ancient India. **Hydrol. Earth Syst. Sci., (EGU), [IF:6.617],** Vol. 24, 4691–4707, https://doi.org/10.5194/hess-24-4691-2020.
13. Jain, S.K. and **Singh, P.K. (2020).** Major Challenges That Climate Change Will Bring to Hydrologists. **J. Hydrol. Eng., ASCE, [IF: 2.064],** 25(9): 02520002, pp. 1-10.
14. Verma, S, **Singh, P.K.** Mishra, S.K., Singh, V.P., Singh, V., and Singh, A. **(2020).** Activation soil moisture accounting (ASMA) for runoff estimation using soil conservation service curve number (SCS-CN) method. **Journal of Hydrology [IF – 6.708]**., Vol. 589, 125114.
15. Gupta, SK., **Singh, PK.,** Tyagi, JV, Sharma, G., and Jethoo, AS. **(2020).** Rainstorm-generated sediment yield model based on soil moisture proxies (SMP**). Hydrological Processes (Wiley);[IF: 3.784], https://doi.org/10.1002/hyp.13789.**
16. Gupta, V., Jain, M.K., **Singh, P.K.,** and Singh, V. **(2020).** An assessment of global satellite-based precipitation datasets in capturing precipitation extremes: A comparison with observed precipitation dataset in India. **International J. of Climatology (RMetS)**; **[IF: 3.651],** DOI: 10.1002/joc.6419, Vol. 40(28), pp. 3667-3688.

17. Singh, D.; Patel, N.; Gadedjisso-Tossou, A.; Patra, S.; Singh, N.; **Singh, P.K. (2020).** Incidence of Escherichia coli in Vegetable Crops and Soil Profile Drip Irrigated with Primarily Treated Municipal Wastewater in a Semi-Arid Peri Urban Area. **Agriculture (MDPI), [IF: 3.408],Vol. 10, 291, MDPI,** https://doi.org/10.3390/agriculture10070291.
18. Nema, M.K., Thakur, H.P., Upreti, Hitesh, Jain, S.K., Mishra, P.K., Thayyen, R.T., **Singh, P.K.,** and Jain, S.K. **(2020).** Estimation of evapotranspiration in lesser Himalayas using remote sensing based surface energy balance algorithm. **Geocarto International, [IF: 3.450], DOI:** https://doi.org/10.1080/10106049.2020.1745300.
19. Vishal Singh, Sanjay Kumar Jain, **P. K Singh**. **(2019).** Inter-comparisons and applicability of CMIP5 GCMs, RCMs and statistically downscaled NEX-GDDP based precipitation in India. **Science of the Total Environment (Elsevier), [IF – 10.753]**. **Vol. 697,** https://doi.org/10.1016/j.scitotenv.2019.134163**.**
20. Gupta, SK., Tyagi, JV, **Singh, PK.,** Sharma, G., and Jethoo, AS. **(2019).** Soil Moisture Accounting (SMA) Based Sediment Graph Models for Small Watersheds. **Journal of Hydrology (Elsevier) [IF – 6.708]**, Vol. 574, pp. 1129-1151, https://doi.org/10.1016/j.jhydrol.2019.04.077.
21. Gupta, S.K., Tyagi, J., Sharma, G., Jethoo, AS., and P K Singh **(2019).** An Event-Based Sediment Yield and Runoff Modeling Using Soil Moisture Balance/Budgeting (SMB) Method. **Water Resour. Manage (Springer), IF – 4.426 33**, pp. 3721–3741 https://doi.org/10.1007/s11269-019-02329-1.
22. **Singh, P.,** & Mishra, S. (2019). Determination of curve number and estimation of runoff using Indian experimental rainfall and runoff data. *Journal of Spatial Hydrology*, *13*(1).
23. Ghadei, S., **Singh, P.** and Mishra, S., (2018). Hydrological Modeling in the Ong River Basin, India using SWAT Model. ***Journal of Spatial Hydrology***, *14*(2).
24. Verma, S, **Singh, P.K.** Mishra, S.K., Jain, S.K., Berndtsson, R., Singh, A., Verma, R. **(2018).** Simplified SMA inspired 1-Parameter SCS-CN Method for Runoff Estimation. **Arabian Journal of Geosciences (Springer), [IF:1.827],** Vol. 11: 420. https://doi.org/10.1007/s12517-018-3736-7.
25. Verma, S, Singh, A. Mishra, S.K., **Singh, P K.,** Verma, R. **(2017).** An Enhanced SMA based SCS-CN Inspired Model for Watershed Runoff Prediction., Vol. 76:736, ***Environmental Earth Sciences (Springer), [IF:3.119].*** https://doi.org/10.1007/s12665-017-7062-2.
26. **Singh, P.K.,** Patel, S.K., Trivedi, M.M. and Patel, G.R**. (2015).** Assessing the relative impacts of the factors affecting MIS adoption process. **International Journal of Sustainable Development & World Ecology (Taylor & Francis) (IF = 4.870)**, Vol. 22(3), pp. 213-218.
27. **Singh, P.K.,** Mishra, S.K., Berndtsson, R., Jain, M.K**.,** and Pandey, R.P. **(2015).** Development of a Modified SMA Based MSCS-CN Model for Runoff Estimation. **Water Resources Management Journal (Springer), IF – 4.426**; Vol. 29(11), pp. 4111-4127.
28. **Singh, P.K.,** Mishra, S.K., and Jain, M.K**. (2014).** A review of Synthetic Unit Hydrograph: from the empirical UH to the advanced geomorphological methods. **Hydrological Sciences Journal (Taylor & Francis), (IF = 3.942);** IAHS. Vol. 59(2), pp. 239-261.
29. **Singh, P.K.,**Yaduwanshi, B.K., Patel, S, and Ray, S. **(2013).** SCS-CN Based Quantification of Potential of Rooftop Catchments and Computation of ASRC for

Rainwater Harvesting. **Water Resources Management Journal (Springer*), [IF – 4.426]***, Vol. 27 (7), pp. 2001-2012.

30. **Singh, P. K.,** Jain, M.K., Mishra, S. K. **(2013).** Fitting a Simplified Two-Parameter Gamma Distribution Function for Synthetic Sediment Graph Derivation from Ungauged Catchments. **Arabian Journal of Geosciences*, (Springer), [IF:1.827]*,** Vol. 6 (6), pp. 1835-1841; DOI: 10.1007/s12517-011-0473-6.
31. Bhunya, P. K., Jain, S.K., **Singh, P. K.,** Mishra, S. K. (**2010**). A Simple Conceptual model of Sediment Yield. **Water Resources Management Journal *(Springer), IF – 4.426;*** Vol. 24(8), pp. 1697-1716, doi: 10.1007/s11269-009-9520-4.
32. **Singh, P.K.,** Gaur, M.L., Mishra, S.K., and Rawat, S.S. **(2010).** An updated hydrological review on recent advancements in soil conservation service curve-number technique. **Journal of Water and Climate Change (IWA); (IF = 2.803);** Vol. 1 (2), pp. 118-134.
33. Bhunya, P. K., **Singh, P. K.,** and Mishra, S. K**. (2009).** Fréchet and Chi-square parametric expressions combined with Horton ratios to derive a synthetic unit hydrograph. **Hydrological Sciences Journal (Taylor & Francis)*, (IF = 3.942);*** Vol. 54 (2), pp. 274-286; doi: 10.1623/hysj.54.2.274).
34. **Singh, P. K.,** Bhunya, P. K., Mishra, S. K., and Chaube, U. C. **(2008).** A Sediment Graph Model Based on SCS-CN Method**. Journal of Hydrology (Elsevier) [IF – 6.708]**; Vol. 349, pp. 244-255.
35. **Bhunya**, P. K., **Singh, P. K.,** Mishra, S. K., Panigrahy, N. **(2008).** A Variable Storage Coefficient (VSC) Model for Rainfall-Runoff Computation. **Hydrological Sciences Journal (Taylor & Francis), (IF = 3.942); IAHS,** (Vol. 52(2), pp. 338-352; doi: 10.1623/hysj.53.2.338).
36. Bhunya, P. K., Berndtsson, R., **Singh, P. K.,** and Hubert, P. **(2008).** Comparison between Weibull and Gamma Distributions to Derive Synthetic Unit Hydrograph using Horton Ratios. **Water Resources Research (AGU); (IF = 6.16);** (Vol. 44, W04421, doi: 10.1029/2007WR006031).
37. **Singh, P. K.,** Bhunya, P. K., Mishra, S. K. and Chaube, U. C. **(2007)**. An Extended Hybrid Model for Synthetic Unit Hydrograph Derivation. **Journal of Hydrology (Elsevier) [IF – 6.708]**; Vol. 336, pp. 347-360.

National Publications:

1. P. R. Patil, S K Mishra, S. K. Jain, and P K Singh **(2018).** Simplified 2-PGD based smooting of S-curve derived UH. ***Indian Water Resources Society (IWRS)***. Vol. 38(1), pp. 25-28.
2. Mishra, S. K., **Singh, P.K.,** and Siddiqui, S.A. **(2014).** SCS-CN Methodology: Recent Research Trends and Advanced Hydrological Applications. ***Indian Water Resources Society (IWRS).*** Vol. 34(4), pp. 29-41.
3. **Singh, P.K**., Patel, S.K., Jayswal, P., and Chinchorkar. S.S. **(2014).** Usefulness of Class A Pan Coefficient Models for Computation of Reference Evapo-transpiration for a Semi-arid Region. ***MAUSAM, IMD*** Journal, Vol. 65(4), pp. 521-528.
4. Chinchorkar. S.S., **Singh, P.K**., Vaidya, V.B., and Pandey, V. **(2014).** Inter Annual Variability and Trends of Southwest Monsoon Rainfall over Anand in Gujarat state. ***MAUSAM, IMD*** Journal, Vol. 65(4), 553-558.
5. **Singh, P.K**., Mishra, S.K., and Jain, M.K. **(2013).** Suitability of Distribution Function Based Models for SUH Derivation Using GIS & Remote Sensing. ***Indian Water Resources Society (IWRS)***, Vol. 33 (4), pp. 33-41.

Book Chapters:

1. Md. Masood Zafar Ansari, Ishtiyaq Ahmad, Pushpendra Kumar Singh, and Saeid Eslamian (2023). Hydrological modeling of Hasdeo River Basin using HEC-HMS. ***Handbook of HydroInformatics Volume III: Water Data Management Best Practices. Elsevier***, Editors (Saeid Eslamian and Faezeh Eslamian). ISBN: 978-0-12-821962-1.
2. P. K. Mishra, Subhrasita Behera, P. K. Singh, and Rohit Sambare (2022). Utility of Satellite-Based Open Access Data in Estimating Land and Water Productivity for a Canal Command. Geospatial Technologies for Land and Water Resources Management. ***Water Science and Technology Library Volume 103; A. Pandey et al. (eds.), Geospatial Technologies for Land and Water Resources Management, Water Science and Technology Library*** 103, https://doi.org/10.1007/978-3-030-90479-1_9.
3. Pravin. R. Patil, S. K. Mishra, Sharad K. Jain, and P. K. Singh (2021). An Analytical S-Curve Approach for SUH Derivation. ***Water Management and Water Governance: Hydrological Modelling Pandey et al. (Editors).Vol. 96, Water Science and Technology Library*** ISBN 978-3-030-58050-6 ISBN 978-3-030-58051-3 (eBook) https://doi.org/10.1007/978-3-030-58051-3. Pp. 349-360.
4. C. B. Singh, S. K. Kumre, S. K. Mishra, and P. K. Singh (2021). Effect of Land Use on Curve Number in Steep Watersheds. ***Water Management and Water Governance: Hydrological Modelling Pandey et al. (Editors).Vol. 96, Water Science and Technology Library*** ISBN 978-3-030-58050-6 ISBN 978-3-030-58051-3 (eBook) https://doi.org/10.1007/978-3-030-58051-3. pp. 361-374.
5. **P K Singh (2019).** Impacts of Climate Change on Temperature. **Climate Change and Its Impacts on Water Resources with Focus on India**. Status Report. **Sharad Jain and P K Singh (Editors.), NIH Roorkee. 2019.**
6. S. K. Mishra, V.P. Singh, **P.K. Singh** (2018). Revisiting the Soil Conservation Service Curve Number Method. ***In Book entitled "Hydrologic Modelling",*** V.P. Singh et al. (eds.), Published by ***Water Science & Technology, Springer.***
7. J V Tyagi, **P K Singh** and Archna Sarkar (2018). Soil Erosion and Sediment Transport Modelling. Status reports on 'Hydrological Modelling: Current Status and Future Directions' for Centre of Excellence for Hydrological Modelling under NHP**,** NIH Roorkee
8. **P. K. Singh**, M.K. Nema, S.K. Jain and S.K. Mishra **(2016).** Water Conservation and Management: ***Towards a social and Technological Initiative for Sustainable Development***, Annual Technical Volume, Vol. II, pp. 22-33, Sengupta et al. (eds). Published by ***The Institution of Engineers (India), Civil Engineering Division, Kolkata***-700020, West Bengal.
9. **P. K. Singh**, S.K. Mishra and A. Kumar **(2016).** Irrigation Scheduling Systems: Principles and Applications. ***In Traditional Irrigation Systems in India, Vol. 1, 2015-16, pp. 66-84, Bandopadhyay et al. (eds). Published by The Institution of Engineers (India), Civil Engineering Division***, Kolkata-700020, West Bengal.

International Conferences:

1. **P K Singh,** Harsh Upadhyay, Vishal Singh, A R Senthilkumar and M K Goel (2024). Water Yield Potential Assessment of an Ungauged Basin using SWAT model and Satellite Evapotranspiration Dataset. INTERNATIONAL

CONFERENCE ON Future of Water Resources, organized by Indian Water Resources Society (IWRS) & Department of Water Resources Development & Management Indian Institute of Technology Roorkee January 18-20, 2024

2. Truptimayee Ghosh, Harsh Upadhyay, **Pushpendra Kumar Singh** and Vishal Singh (2024). A comparative assessment of the satellite earth observation datasets for an ungauged basin of the Western Ghats of India. INTERNATIONAL CONFERENCE ON Future of Water Resources, organized by Indian Water Resources Society (IWRS) & Department of Water Resources Development & Management Indian Institute of Technology Roorkee January 18-20, 2024
3. **P K Singh** (2024). Water and Infrastructure Development. Paper presented at International Water Conclave, Shillong. Organized by the Govt. of Meghalaya, 9-10 Feb., 2024.
4. **P K Singh** and Z. Ahmad (2020). River Dynamics and Hydraulic Structures. Theme Paper in RWC-2020 jointly organised by NIH Roorkee and IIT Roorkee.
5. **P K Singh**, P K Mishra, Sharad K Jain, M K Goel, S K Jain and Suman Gurjar (2019). Water Accounting Plus (WA+) Framework for Estimating Water Productivity and Land Productivity in Subarnarekha Basin. IGWC-2019. 8th International Groundwater Conference on 'Sustainable Management of Soil-Water Resources' during Oct. 21-24, 2019, IIT Roorkee.
6. Jain, S.K. and **Singh, P.K.** (2016). Water Productivity in Agriculture. Paper presented at national workshop on "Challengers in Irrigation Management for Food Security" held on November 26-27, 2016, organized by Dept. of WRDM, IIT Roorkee.
7. S. K. Mishra, V.P. Singh, **P.K. Singh** (2016). Revisiting the Soil Conservation Service Curve Number Method. Full length paper presented at ICWEES-2016 International Conference on Water Environment, Energy & Society-2016 (Organized By Texas A & M University, USA & AISECT University, Bhopal, India) : March 15 - 18, 2016 at Bhopal].
8. **P.K. Singh**, S.K. Mishra, C.S.P. Ojha, M.L. Gaur, M.K. Jain (2011). A comparative Study of Probability Models for SUH Derivation from Un-gauged Catchments Using ILWIS GIS and SRTM Data. Paper accepted for oral presentation and publication in the proceeding of the International Conference on "Sustainable Water Resources Management and Climate Change Adaptation (SWRMCCA) to be held during February 17 - 19, 2011 at NIT Durgapur, M.G. Avenue, Durgapur - 713209, West Bengal, India.

Books Edited:

1. **HYDROLOGIC KNOWLEDGE IN ANCIENT INDIA (Second. Edition).** National Institute of Hydrology, Roorkee. Dr. Suhas Khobragade, **Dr. P K Singh**, Dr. A K Lohani, Md. Furqan Ullah and Mrs. Charu Pandey (Editors). **2018.**
2. **Climate Change and its Impacts on Water Resources with Focus on India**. National Institute of Hydrology, Roorkee, India. **Sharad K. Jain and P K Singh. (Editors) (2019).**
3. **HYDROLOGIC KNOWLEDGE IN ANCIENT INDIA (Third. Edition).** National Institute of Hydrology, Roorkee. Dr. A K Lohani, Dr S.S. Rawat, Dr. M. Arora, Dr. P K Singh, Dr Deepak Bisht, Mr. Ram Kumar and Mr Naresh Kumar, and Mrs. Charu Pandey and others (Editors).

PROJECTS COMPLETED/ONGOING

1. NIH Internal Research Project:

2019-21: Developments of Water Accounts for Subarnarekha Basin Using Water Accounting Plus (WA+) Framework. **PI- Completed.**

2. Sponsored Projects:

National Hydrology Project (NHP) Funded:

A. 2022-25: Hydrological Assessment of Ungauged Basins (Aghanashini, Dasanakatte, Sita Nadi, Madisala Hole, Swarna Nadi and Gurupur River Basins) of the West Flowing Rivers in the Western Ghat Region of Karnataka. **PI- (INR 45.0 Lakhs)-Ongoing.**

This particular work is being done with the Water Resources Department, Government of Karnataka. Here we are assessing the water yield potential of the six ungauged basins. We are also assessing the impacts of climate change and LULC change on water yield potential of these ungauged basins. We are using WA+, SWAT and CMIP6 GCMs and Budyko framework. The project is funded by National Hydrology Project (NHP), Ministry of Jal Shakti, Govt. of India.

B. 2020-23: Development of Water Accounts for the different sub-basins of Brahmaputra and Barak River Basins in the state of Meghalaya Using Water Accounting Plus (WA+) Framework. **PI- Funded (INR 14.5 Lakhs)-Ongoing.**
This particular work is being done with the Water Resources Department, Government of Meghalaya. Here we are assessing the Water and Land productivity and availability and consumption of the Green Water and Blue Water in the state of Meghalaya. The project is funded by National Hydrology Project (NHP), Ministry of Jal Shakti, Govt. of India. **[in the completion stage].**

C.* 2021-2023:** Long term hydrological assessment for the development of water security plan into three sub-basins namely Barak, Minor rivers draining into Bangladesh and Minor rivers draining into Myanmar sub-basins in the state of Mizoram. **(Co-PI) - (INR 23.5 Lakh) – *Ongoing.

This particular work is being done with the Water Resources Department, Government of Mizoram. Here we are assessing the Water Demands and Water Availability in the state of Meghalaya. We are using WA+, SWAT and WEAP models. The project is funded by National Hydrology Project (NHP), Ministry of Jal Shakti, Govt. of India.

D. 2021-23: Development of Water Accounts for the selected sub-basins of Brahmaputra, Barak and Irrawady-Chindwin basins in the state of Nagaland using Water Accounting Plus (WA+) Framework. (**Co-PI)- (INR 9.5 Lakhs)-Ongoing.**
This particular work is being done with the Water Resources Department, Government of Nagaland. Here we are assessing the Water and Land productivity and availability and consumption of the Green Water and Blue Water in the state of

Nagaland. The project is funded by National Hydrology Project (NHP), Ministry of Jal Shakti, Govt. of India.

3. **NMHS Funded:**
   - **2019-2023:** Snow and glacier contribution and impact of climate change in Teesta river basin, Eastern Himalaya. **(PI) - NMHS Funded (INR 1.4 Crore) – Ongoing.**
     This project is funded by NMHS, Ministry of Earth Sciences and Climate Change, Govt. of India. Here we are assessing the snow and glacier melt contribution and impact of climate change on the water availability in the Teesta basin, Eastern Himalaya. We have also established 07 meteorological stations (AT, RH, Rain gauge and soil moisture) sensors. **[in the completion stage].**

4. **NMSHE Funded:**
   - **2016-20:** Observation and Modelling of Various Hydrological Processes in a Small Watershed in Upper Ganga Basin. **NMSHE-Sub-Project-5, DST, New Delhi. Co-PI (INR 1.34 Crore). Completed.**
     This project was funded by DST. Here we established an experimental watershed in the foothills of Himalayas to monitor various hydro-meteorological processes.

5. **CONSULTANCYPROJECTS COMPLETED/ONGOING**

   - **2021-23:** Estimation of Economic Losses in Real Terms per Hectare Basis due to Forest Fire in Uttarakhand and Madhya Pradesh. **(Completed) ICFRE, Dehradun. Co-PI (INR 110 lakhs).**
   - **2020-2021:** Study of Various Possible Scenarios for Understanding the Long-term Effect of en-route Canal Irrigation for Proposed Mahanadi-Godavari Link - (**Completed). NWDA, CO-PI (INR 85 lakhs).**
   - **2019-20:** Water Availability and Water Budgeting Study of Kalsi Micro-Watershed, Uttarakhand. Watershed Management Directorate, Dehradun. **(Completed), Co-PI (INR 06 lakhs).**
   - **2017-18:** Evaluation of ambitious Central Sector Scheme Development of Water Resources Information System (DWRIS) for XII Five Year Plan (2012-17) with outlay of **INR 1370 Crore**. **MoJS, New Delhi. Co-PI. Completed.**
   - **2017-18:** Hydrological Studies and Multi-Reservoir Simulation for the Proposed Mahanadi-Godavari Link. **NWDA, Co-PI (INR 17 lakhs). (Completed).**
   - **2022-2023:** System Studies for Proposed Farakka–Sundarban Link Project - **NWDA, CO-PI (INR 85 lakhs).** (**Ongoing**).

6. **Technology Transfer/Training Services: (05 days each)**

Sl. No.	Name of the Training	Dates
1	Basic Hydrology for NE States under NHP	Sept. 26-30, 2016
2	Basics of Hydrology under NHP	June 27-July 01, 2017
3	Application of Water Accounting Plus (WA+) Tool for Water Resources Management.	16-20 November, 2020

4	Application of Water Accounting Plus (WA+) Tool for Water Resources Management for the WRD officials of the North-East.	November 15-19, 2021
5	Application of Water Accounting Plus (WA+) Tool for Water Resources Management for WRD officials of Nagaland.	November 28-December 02, 2022
6	Sediment Yield and Reservoir Sedimentation (National training programme under NHP)	Feb. 21-25, 2022
7	Sediment Yield and Reservoir Sedimentation (National training programme under NHP)	Feb.25- Mar.01, 2019

7. M.Tech./Ph.D. Thesis guidance:

Name and Registration No.	Thesis Title	Degree	Year	Institute
Debrupa Chatterjee, (Reg. No. 20039001008)	Developing Satellite-based Water Accounting Plus (WA+) Framework for Water Resources Management in Godavari River Basin under Changing Climate	Ph.D. (Geo-informatics)	2022	Symbiosis Institute of Geo-informatics, Symbiosis International (DU), Pune
P Sreenivasulu; Enrolment no.: 15548013	Development of SCS-CN model for runoff estimation using soil moisture proxies	M.Tech. WRD (Civil)	2017	IIT Roorkee
Mohit Tomar, 15547003	An advanced NESCS-CN model for runoff estimation using GIS and remote sensing	M.Tech. WRD (Civil)	2017`	IIT Roorkee
Sarat Chandra Ghadei, Enrollment No.15548021	Comparative evaluation of CN determining methods and NRSCS-CN based models for runoff estimation	M.Tech. WRD (Civil)	2017	IIT Roorkee
Chakra Bikram Singh, Enrollment o.16548005	Effect of land use on curve number in steep watershed	M.Tech. WRD (Civil)	2018	IIT Roorkee
Krishna Prasad Dumrakoti, Enrolment No: 16547002	Effect of watershed characteristics on runoff curve number	M.Tech. WRD (Civil)	2018	IIT Roorkee
Jhalak Mohan Ojha, Enrolment No: 17548008	Sensitivity of modified SCS-CN method on watershed slope and land use	M.Tech. WRD (Civil)	2019	IIT Roorkee
Nabeen Kumar Shrestha, Enrolment No.: 17548017	Application of modified SCS-CN method	M.Tech. WRD (Civil)	2019	IIT Roorkee

Nishchal Chhatkuli, Enrollment no 17548020	Application of SCS-CN technique to rainfall, runoff and sediment yield data from plot scale watershed	M.Tech. WRD (Civil)	2019	IIT Roorkee
Masood Ansari, Roll no. 19244011	Hydrological modelling of Hasdeo basin, Chhatisgarh, India	M.Tech. (WRD & Irrigation)	2021	National Institute of Technology Raipur
Pooja Patle, Roll no. 19244012	Application of water accounting plus framework on the Mahi basin, India			
Mtoro Theophil, Enroll. No. 19537032	Assessment of water consumption patterns, land productivity and water productivity in Kilombero basin, Tanzania using water accounting plus (WA+) framework.	M.Tech. (Hydrology)	2021	IIT Roorkee
Saptoparna Saha (Reg. No. 2000184MSG)	Application of water accounting plus (WA+) framework for the estimation of land and water productivity satellite earth observation datasets of Gomti river basin	M.Sc. (Geo-informatics)	2022	TERI, New Delhi.
MUSHAHID ALI Enrolment No: - GJ6317	Assessment of soil erosion by RUSLE model using remote sensing and GIS - a case study of Ramganga Basin	Master of Science In Remote Sensing & GIS Applications	2022	Aligarh Muslim University, Aligarh
Jigar kumar Patel Enrolment No.: 04-2267-2013	Development of distribution function based SUH models using GIS and remote sensing	M.Tech. (Agril. Engg.)	2015	AAU Anand

8. TRAINING UNDERGONE IN THE FIELD OF WATER RESOURCES

- Tailor Made Training on Water Accounting Plus (WA+); IHE Delft, The Netherlands. March 2018-June 2018.
- Tailor Made Training on Water Accounting Plus (WA+); IHE Delft, The Netherlands NWA PUNE (by faculty from IHE Delft, The Netherlands). July 2018-September, 2018.
- Special Training Programme for MOWR Officers on WATER ACCOUNTING PLUS (WA+) by IHE Delft, the Netherlands CWC NEW DELHI (by faculty from IHE Delft, The Netherlands). May 08-27, 2018 **(21 days).**
- Remote Sensing Analysis and Python Programming at IIRS Dehradun. Jan. 22-Feb. 18, 2018 **(27 days).**

- Hydro-informatics for Integrated Water Resources Management using SWAT Model. A training at IIT Madras under GIAN. Nov. 28-Dec. 09, 2016 **(12 days).**
- Google Earth Engine (GEE) Training at NIH, Roorkee by IWMI under World Bank NHP. Aug.19-23, 2019 **(05 days).**
- Hydrologic Modelling for Decision Making" under World Bank NHP at NIH Roorkee. Nov. 29-Dec. 18, 2019 **(20 days**).
- Training course on MIKE Hydro Basin under the ongoing DSS(PM) development programme at NIH Roorkee. Oct. 12-18, 2020 **(07 days)**.
- Training on Reservoir Bathymetry and Water Accounting in Irrigated Systems using Google Earth Engine from April 24-May 03, 2023 at NIH Roorkee by the World Bank, India.

9. Prizes/ Medals/ Scholarships / Honors / Awards:

- Recipient of **Chancellor's Gold Medal** in **B.Tech Degree** Program.
- Recipient of Graduate Aptitude Test in Engineering **(GATE) Fellowship** during M.Tech. Degree Program
- Recipient of Ministry of Human Resources Development and Management **(MHRD) Fellowship** during Ph. D. Degree Program.
- **Indian Council of Agricultural Research NET** Certificate Year: 2010.
- **Post-doctoral Research Fellow** for the period August 1, 2009 to December 31, 2010 at NIER, South Korea (not availed)

JOURNAL'S REVIEWER:

- Journal of Hydrology
- Hydrological Sciences Journal
- Water Resources Management
- Environmental Monitoring and Assessment
- Irrigation and Drainage (ICID)
- Applied Computing and Geosciences
- Hydrological Processes Journal
- Science of the Total Environment
- Agricultural Water Management

(Pushpendra K. Singh)