

Curriculum Vitae: Sharad Kumar JAIN

Visiting Professor, Civil Engineering Department, IIT Roorkee, India.

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Career Objective: To contribute towards the use of water for the benefit of the society.

Education: *Doctor of Philosophy*, University of Roorkee, Roorkee (now Indian Institute of Technology), 1990.

Master of Technology (Hydraulics & Water Resources), Indian Institute of Technology, Kanpur, 1982.

Bachelor of Engineering (Civil), Univ. of Roorkee, 1980.

Experience: I have R & D and teaching experience of more than 41 years in the field of hydrology and water resources. Study interests include Surface Water Hydrology, Water Resources Planning and Management, and Application of Advanced Tools such as Artificial Neural Networks, Remote Sensing, GIS, and Decision Support Systems.

As a part of teams from India and abroad, I have worked on a number of research and consultancy projects and on topics concerned with real-life problems or with applied research. Some important topics include developing operation policies for reservoir systems to maximize benefits, assessment of environmental flows for Indian rivers, preparing detailed project reports for river interlinking schemes, assessment of water availability, application of advanced tools such as ANN for hydrologic problems, and impact of climate change on water resources. We have applied a number of catchment models to the Indian river basins to simulate, understand, or predict their hydrologic behavior. My group has developed a software package for Reservoir Analysis and have organized many short-term courses and conferences. My NIH group had also set up an experimental basin in Lesser Himalayas.

I have also contributed to the National Hydrology Project (NHP) which is funded by the Government of India and the World Bank with the objectives of all round development of hydrologic sector in India. In addition, I have also provided services to the International Atomic Energy Agency, the International Water Management Institute (IWMI) on the Nexus Gains project, and to the Govt. of Ladakh.

Employment History:

Mar. 2020 – till date	Visiting Professor, Civil Engineering Department, IIT Roorkee, India.
Jun. 2017 – Feb. 2020	Director, National Institute of Hydrology (NIH), Roorkee, India.
Mar 2017 – Jun 2017	Director General (additional charge), National Water Development Agency, Ministry of Jal Shakti, Govt. of India.
Jan. 2013 – Jun. 2017	Scientist G, NIH, Roorkee. Also, the Head of Water Resources Systems (WRS) Division, Project Director (National Hydrology Project), Head (Climate change cell), and coordinator of the Western Himalayan Regional Center (Jammu).
Apr. 2012 – Dec. 2012	Scientist F, NIH, Roorkee. I was the Head of Water Resources Systems

	(WRS) Division, Head (Climate change cell), and coordinator of the Western Himalayan Regional Center (Jammu).
Apr. 2009 – Apr. 2012	Professor, NEEPCO (North Eastern Electric Power Corporation Limited) Chair at IIT Roorkee (on deputation).
1999 - 2009	Scientist F, NIH, Roorkee. I was the Head of Water Resources Systems (WRS) Division and coordinator of Western Himalayan Regional Center (Jammu) and Center for Flood Management Studies (Guwahati) of NIH. Some important works of the WRS division include development of Decision Support Systems for integrated river basin planning and management, Hydrological Studies for the Ken-Betwa River Linking Project, Applications of Remote Sensing and GIS in the field of Water Resources, Applications of ANN and Fuzzy Techniques in Hydrology, and conducting short-term courses on various topics.
1991 - 1999	Scientist E, NIH. Involved in conducting and guiding research in the area of surface water hydrology, water resources systems and conducting short-term training courses. Also served as the Head of NIH Regional Center at Jammu for a few years.
1986 - 1991	Scientist C, NIH. Involved in research in the area of water resources systems, hydrologic modeling, and software development. Worked on a project dealing with application of a physically-based distributed catchment model (SHE) to a few Indian basins. I was also involved in review of Indian/ISO standards and re-drafting of one ISO standard.
1982 - 1986	Scientist B, NIH. Involved in research in the area of water resources systems, hydrologic modeling, and software development.

Foreign Assignments/ Trainings (Long-term only)

Jun 2002 – Jun 2003	Visiting faculty at the Department of Civil and Environmental Engg., Louisiana State University, Baton Rouge, USA.
Apr 1993 - Apr 1994	Post-Doctoral fellow at the National Research Institute for Earth Science and Disaster Prevention, Tsukuba, Japan, under a fellowship of Science and Technology Agency, Govt. of Japan.
May 1988 - Sep 1988	Attended training at Danish Hydraulic Institute, Denmark, regarding application of a physically based catchment model (SHE model) to Indian catchments, under a European Commission funded project.
Jun 1987 - Aug 1987	Participated in the UNESCO sponsored International Higher Hydrological Course at Moscow State University, USSR.
May 1984 - Jun 1984	Visiting Scientist, Civil Engg. Department, Univ. of Birmingham, UK.
Jan 1984 - May 1984	Visiting Scientist, Center for Research in Water Resources, Univ. of Texas, Austin, USA.

Awards & recognitions:

- a) Included in a global list of top 2% of the most-cited scientists in the field “Environmental Engineering”; this list was released by Stanford University, USA, in 2021 and 2022.
- b) Awarded 'ISH Life-time achievement Award' for the year 2023 by The Indian Society for Hydraulics (ISH).
- c) Awarded *Lifetime Contribution in Engineering Award* 2021 from IE(I), Roorkee.
- d) Awarded '*Prof. S.N. Gupta Memorial Award*' for the year 2021 by The Indian Society for Hydraulics (ISH).
- e) Received Eminent Engineer Award 2019 from IE(I) Uttarakhand State Center, Dehradun.
- f) Appointed adjunct Professor, IIT Madras, 10/2018 – 10/2020, 05/2023 - till date.
- g) Awarded a grant by Indo-US Science and Technology Forum (IUSSTF) jointly with Prof. Desiree Tullos, Oregon State University, USA, to organize a workshop “Modeling and Managing Flood Risk Management in Mountain Areas”, 17-19 February 2015, Sacramento, California.
- h) A Technical Note co-authored and published in the Journal of Hydrologic Engineering, ASCE, was awarded the Best Technical Note Award in 2009.
- i) Awarded the post-doctoral fellowship of the Science and Technology Agency of the Gov.t of Japan for one year in 1993-94.
- j) Awarded Govt. of India National Scholarship for Secondary and University Education.

Membership of Professional Societies:

- Fellow, Institution of Engineers (India) (F – 116128-4),
- Life Fellow, Indian Association of Hydrologists (LM - 179),
- Life Fellow, Indian Water Resources Society (F-10-1264),
- Member, International Association of Hydrological Sciences (M-923),
- Fellow Member, Indian Society for Hydraulics [F-930(2022)],
- Associate Member, American Geophysical Union, and
- Member, International Association for Hydraulic Research.

Technical and Management Related Contributions (Dr Sharad Jain)

A. Technical Contributions

The contributions are in terms of work on research and consultancy projects, organizing training courses, keynote talks, and delivering lectures in the training courses.

A1. As Visiting Professor at IIT Roorkee (March, 2020 – till date)

- a) Teaching:** At Civil Engineering Department, IIT Roorkee, I am teaching courses to BTech (4th year and 2nd year) and MTech/PhD students.

Courses taught: CEN-204: Engineering Hydrology (3 times); CEN-531: Advanced Hydrology (3 times), CEN-534: Modeling, Simulation, and Optimization; CEN-499: evaluation of students' internship reports, presentation, and interaction (two times); CEN-300: BTech project, guided three teams for the 2023 spring semester.

- b) Guidance:** Co-guiding one student for PhD and two students for MTech dissertations.

- c) Publications:** During this period, I have published 26 papers, wrote 4 Book Chapters, edited one book, wrote five Guest Editorials, delivered 29 keynote/lectures. Five papers are under review.

Wrote two articles for national newspapers.

- d) Editorship of Scientific Journals:** Member, Editorial Board/ Board of Advisors: 4 journals.

Guest Editorship of special issues: 03 international journals.

e) Membership of Technical Committees

- i. Project Appraisal & Monitoring Committee (Hydrology and Cryosphere), Ministry of Earth Sciences.
- ii. Research Advisory Committee, CSIR-Central Inland Fisheries Research Institute, Barrackpore (till March 2022).
- iii. Committee to examine the effect of GLOF in Teesta River on the Projects, Constituted by National Dam Safety Authority (NDSA), Ministry of Jal Shakti.
- iv. Project Monitoring Committee (PMC) for "Preparation of DPR for Kalpasar Dam", constituted by the Ministry of Earth Sciences.
- v. Evaluation Panel of Indo-Swiss National Science Foundation (SNSF) to review and recommend project proposals for funding under a Joint Research call.
- vi. Expert Committee on Start-up Research Grant and National Postdoctoral Fellowship Schemes: 2021-24, Earth and Atmospheric Sciences. Science and Engineering Research Board, New Delhi.
- vii. Project monitoring committee for a NSM project, hosted by Centre for Development of Advanced Computing (C-DAC), Pune.
- viii. Programme Advisory Committee (PAC)-Earth & Atmospheric Sciences (SERB) – till Feb, 2021.
- ix. Search Committee for selection of a new President of India Water Partnership (IWP), New Delhi.

- f) Webinars:** organized two Webinars, a) "Flood management in India" on 25/09/20, and b) "Water resources management in Himalayan river basins" on 23/03/22;

- g) Australia India Water center (AIWC):** Initiated the efforts at IITR to make IITR a network partner and active member of AIWC. Providing inputs to the various activities of AIWC which is a network of about 25 institutes from India and Australia.

- h) Indo-Dutch bilateral call (DST, Govt. of India and NOW, Govt. of The Netherlands):** Helped prepare a proposal responding to an Indo-Dutch bilateral call; the proposal has been funded and I am contributing as an advisor.

- i) **Departmental Development and Planning Committee:** Contributing as a member.
- j) **Thesis evaluation:** evaluated 07 PhD theses from different IITs/ IISc,
- k) **Paper/ proposal review:** Reviewed about 65 technical papers and proposals.
- l) **Miscellaneous:** Contributed to many tasks such along with faculty colleagues from the Civil Engineering Department: question paper setting, helped prepare 03 other proposals; Organizing team of Roorkee Water Conclave 2022 and 2024; etc.

A2. NIH (internally) Funded R&D Projects

Such studies were taken up responding to the needs of users (Central/State Govt. organizations, or based on suggestions from Technical Advisory Committee, or topics identified in NIH). Some of the studies are: developing reservoir operation strategies for Sabarmati and Machhu systems, application of physically-based distributed catchment model – *Système Hydrologique Européen* (SHE) and other catchment models for various hydrological tasks, application of remote sensing and GIS, artificial neural networks, etc. to hydrological problems, hydrological analysis for interlinking of rivers, and software development. Findings of these studies were presented in NIH technical reports and in technical papers.

A3. Externally Funded R&D and Consultancy Projects

- I have contributed to about 26 consultancy projects whose results help in solving real-life problems related with development and management of water resources.
- I have also contributed to about 20 Externally Funded R&D Projects on various aspects of hydrology and water resources.
- Contributed to the National Hydrology Project and its predecessor (HP-1 and HP-2) by way of research projects, development of Decision Support System, and training courses. As the NHP Project Director at NIH, developed training programs and helped in their implementation, directed the implementation of NHP R&D program, and implementation of Decision Support System (Planning and Management).
- Directed the implementation of DST sponsored NMSHE (National Mission for Sustainable Himalayan Ecosystem) project and the other projects.
- My team has developed many computer programs for analyses related with reservoir systems that were later organized in a software package called ReSyP.
- Led a team to establish an experimental catchment on Herval river, a tributary of Ganga in Lesser Himalayas, in Chamba district, Uttarakhand, and initiated hydrological studies.
- Consultant to the International Water Management Institute (IWMI) for the *Nexus Gains* project (ongoing, 2022).
- Consultant to PDCOR, Jaipur, for the project on “Ladakh: Review of existing projects, planning and development of new projects, and flood management plans” (ongoing, 2022).

A4. Contributions as Member of Technical Committees

Serving the profession as a member of various scientific committees, constituted by the Ministry of Jal Shakti, Ministry of Earth Sciences, DST, Bureau of Indian Standards, Central Water Commission, and so on. The major contributions are:

1. Chairman – Expert Appraisal Committee (River Valley and Hydroelectric Projects), Min. of Environment & Forests and Climate Change (2016 - 2020).

2. Member of the Project Monitoring and Appraisal Committee on Hydrology and Cryosphere, constituted by the Ministry of Earth Sciences, Govt. of India (2014 – 2023, 2023 - till date).
3. Member, Research Advisory Committee, ICAR-CIFRI (Central Inland Fisheries Research Institute), Barrackpore, West Bengal, (2019 – 2022).
4. Member, Project Management Committee (PMC) for preparation of DPR for the Kalpasar project, constituted by Ministry of Earth Sciences, Government of India (2021 – till date).
5. Member of the “Sub-committee for comprehensive evaluation and system studies on Inter-linking of Rivers”, constituted by the Ministry of Jalshakti (2023 – till date).
6. Member of the sub-committee for “Systems Studies for Identification of Most Appropriate Alternative Plan” of the “Special Committee for Inter-linking of Rivers”, constituted by the Ministry of Jalshakti (2015 – 2022).
7. Member, Project Monitoring Committee, National Supercomputing Mission project “Development of multi-sectorial simulation lab and science-based decision support framework to address urban environment issues”, Centre for Development of Advanced Computing (C-DAC), Pune.
8. Member of the Evaluation Panel for reviewing the research proposals under the joint call by the Ministry of Earth Sciences, Govt. of India and the Swiss National Science Foundation (SNF) (2022).
9. Member of the Search Committee to search and recommend for appointing President of India Water Partnership (IWP) (2022).
10. Member, Programme Advisory Committee (PAC) - Earth & Atmospheric Sciences (SERB), Govt. of India, (2019-2021).
11. Member of Senate of IIT Roorkee (2018 - 2019).
12. Member of the Expert Committee on "State Spatial Data Infrastructures and its Applications" set up by Dept. of Science & Tech., Govt. of India (2016 - 2019).
13. Member of Task Force on Water, Scientific Advisory Council to Prime Minister (2013-14); co-authored the Task Force report “Technology Interventions in the Water Sector”, http://tenet.res.in/Publications/Presentations/pdfs/SAC-PM_report_on_water.pdf
14. Member, Scientific Steering Comm. of the Global Water Systems Project, Univ. of Bonn, Germany (2009-15),
15. Member of Committee for “Zonal Master Plan of Bhagirathi Eco-Sensitive Zone”, Govt. of Uttarakhand, 2017-18.
16. Member of Committee for “Framework for proper planning and management of water resources in the North Eastern region of India”, 2018.
17. Member of Committee to “Assess the carrying capacity of ecologically sensitive areas in the Western Ghats region of Karnataka”, Ministry of Environment & Forests and Climate Change, 2018.
18. Member, Organizing Committee and co-chair Water Theme of 2014 Indo-American Frontiers of Engineering Symposium, held in Mysore during May 19-21, 2014.
19. Member of Belmont Forum Panel of Experts, constituted by Belmont Forum (National Science Foundation USA and Natural Environment Research Council UK), 2013.
20. Member, Working Group of Planning Commission on “Water database development and management for the 12th five-year plan (2012-2017)”.
21. Member of Commissioning Panel for the flagship Indo-UK initiative on ‘Changing Water Cycles’, hosted jointly by the Ministry of Earth Sciences (MOES) and the Natural Environment Research Council (NERC) of UK.
22. Chairman, Reservoirs and Lakes Sectional Committee (WRD 10) of the Bureau of Indian Standards, New Delhi.

23. Member of the National Mirror Committee (NMC) of the Bureau of Indian Standard for the Technical Committee 113 of International Standard Organization (ISO).
24. Member, Core Group of the consortium of IITs to prepare Ganga River Basin Management Plan. Also, the member of the Water Resources Management (WRM) group and the Environmental Flow (E-flow) Group.

B. Publications

B1. Books

Co-authored five books:

1. **Water Resources Systems Planning and Management (2nd Edition)**. Authors: SK Jain and VP Singh. Developments in Water Science # 51, Elsevier Science, The Netherlands, 2023, 858 pp, ISBN 0-444-51429-5. An Indian edition of the book was published in 2006.
2. **Hydrology and Water Resources of India** (Authors: SK Jain, PK Agarwal, and VP Singh), published by Springer Verlag, the Netherlands under the series *Water Science and Technology Library*, 2007, ISBN: 1-4020-5179-4; 1262 pages.
Based on the material collected while writing this book, a website was developed and can be seen at: <http://117.252.14.242/rbis/rbis.htm>
3. **Risk and Reliability Analysis: A Handbook for Civil and Environmental Engineers** (Authors: VP Singh, SK Jain, Aditya Tyagi). Pub. by American Soc. of Civil Engineers, USA, Oct. 2007, 783pp, ISBN: 978-0-7844-0891-9.
4. **Water Resources Systems [CV – 405]**. Authored the study material consisting of 22 modules (290 A4 pages). Published by The Institution of Engineers (I), Kolkata, 2013.
5. **Engineering Hydrology: An Introduction to Processes, Analysis, and Modeling**, by SK Jain and VP Singh, published by McGraw Hill Education, Feb. 2019, 598 pages.

B2. Technical papers

Papers published: 298. Citations: 9190, h-index 43, i10-index 95 (Google scholar);

Link to Google scholar profile <https://scholar.google.co.in/citations?user=269avwoAAAAJ&hl=en>

Link to Scopus profile - <https://www.scopus.com/authid/detail.uri?authorId=29767443800>

Link to LinkedIn profile - <https://www.linkedin.com/in/sharad-jain-1317092b/>

B3. Edited Books

1. Blöschl, Günter, Kuni Takeuchi, Sharad Jain, Andreas Farnleitner, and Andreas Schumann (Editors) (2011). Risk in Water Resources Management. Proceedings of the Symposium HS03 held during the IUGG GA in Melbourne (28 June-7 July). IAHS Publ. 347, ISBN 978-1-907161-22-3.
2. Water, Environment, Energy, and Society. Volume I: Hydrologic and Hydraulic Modelling, Proceedings of the International Conference WEES-2009, held at New Delhi, January 12-16, 2009.
3. Water, Environment, Energy, and Society. Volume II: Statistical and Systems Analysis Techniques, Proceedings of the International Conference WEES-2009, held at New Delhi, January 12-16, 2009.
4. Water, Environment, Energy, and Society. Volume III: Water Quality and Environmental Considerations, Proceedings of the International Conference WEES-2009, held at New Delhi, January 12-16, 2009.

5. Water, Environment, Energy, and Society. Volume IV: Water Resources Planning and Management, Proceedings of the International Conference WEES-2009, held at New Delhi, January 12-16, 2009.
6. Bhuiyan, Chandrashekhar, Flügel, Wolfgang-Albert, and Jain, Sharad K. (Editors) (2021). Water Security and Sustainability. Proceedings of Down To Earth 2019 International Conference. Springer Nature Singapore, ISBN: 978-981-15-9804-3.

B4. Special Reports

1. Chen, Jianyao, Taniguchi, M., and Jain, S. K. (2006). Proceedings of the Workshop on "Global Water System Hotspot in the Asian Region: Mega cities and Dams", 2nd GWSP-Asia Network, held during 8-11 June, 2006, Guangzhou, China, Asia-Pacific Network for Global Change Research.
2. Co-author of the report "Water resources assessment – the national perspective", Published by the National Remote Sensing Centre, ISRO, Govt. of India, Oct. 2009.
3. Contributed in the report "Climate Change and India: A 4*4 Assessment", INCCA: Indian Network for Climate Change Assessment, Ministry of Environment and Forests, Govt. of India, New Delhi, November 2010.
4. Rai, S.N., and S. K. Jain (2011). Hydrological Sciences: A report to IAHS 2011. Indian National Report for IUGG 2011. XXV IUGG General Assembly (28 June - 7 July 2011), Melbourne, Australia.
5. Co-author of the Report of the Sub-committee on "Technology Interventions in the Water Sector". Submitted to the Scientific Advisory Council to the Prime Minister (SAC to PM), April 2014.
6. Jain, S.K. et al. (2015). Assessment of environmental flows for Himalayan Rivers. Report of Project No. MoES/PAMC/H&C/38/2013/PC-III, Dec. 2015.
7. Co-author of the Report of the Committee on "A Framework for Water Resources Assessment", submitted to the Ministry of Water Resources, New Delhi, January 2017.
8. Hydrology in Ancient India (revised edition), National Institute of Hydrology, Roorkee, 2018.
9. Special report: Jain, S.K., and P.K. Singh (2019) (Editors). Climate change and its impacts on water resources with focus on India. Special Report – 1/19, National Institute of Hydrology, Roorkee. 275pp.

B5. Book Chapters: total 20, Contributed 11 articles in Encyclopedias

B6. Prepared about 90 technical reports at NIH and 5 Special Reports.

B7. Contributions as Journal Editor/ Member of Editorial Board

1. Member of Editorial Board, Hydrological processes Journal, Wiley-Blackwell Publishers, UK, (January 2010 – till date).
2. Member (2023 – till date) of Editorial Board, Environmental Research Letters (ERL), published by IOP Publishing, UK.
3. Associate Editor in Freshwater Science and Guest Associate Editor in Water and Wastewater Management, Frontiers Journal (2016- till date).
4. Member of Editorial Board of the Journal of Indian Society for Hydraulics.
5. Member of Guest Editing team for Special Issue on "Towards more credible models in catchment hydrology to enhance hydrological process understanding", Hydrological processes Journal.
6. Guest Editor for a special issue of Journal of Hydrologic Engineering, American Society of Civil Engineers, New York.
7. Member, International Board of Advisors, Journal of Hydrologic Engineering, American Society of Civil Engineers, New York.
8. Editor, Journal of Indian Water Resources Society (1999 – 2002), (2009 - 2011).

9. Member Editorial Board, Hydrology Journal, Indian Association of Hydrologists (1997-2011).

B8. Audio-Visual Programmes

1. Recorded an interview for Rajya Sabha TV under Eureka series in 2017: <https://www.youtube.com/watch?v=hkYBn4l0wEM>
2. Recorded an EDUSAT program lecture on Integrated Water Resources Management at Indian Institute for Remote Sensing, Dehradun, in 2017. <https://www.youtube.com/watch?v=a4m0YJaU1GI>
3. Recorded seven video programs: at the Educational Multi Media Research Center (EMMRC), IIT, Roorkee.

B9. Services as Reviewer

- 1) I have reviewed/continue to review research proposals for DST, Min. of Earth Sciences, Indo-US Science and Technology Forum, Indian National Committee of Hydrology, book proposals, book reviews for the Journal Current Science, etc. Reviewed more than 60 proposals so far.
- 2) I have reviewed papers for more than 35 international and national journals. On an average, I review about 15 papers per year.
- 3) I carried out Expert Review of the Draft of the Water Chapter of the report "Global Environmental Outlook 5", Published by the United Nations Environment Program (UNEP).
- 4) Served as Expert Reviewer of the 5th Assessment Report, IPCC Working Group 1.

B10. Newspaper Articles

1. Save the Water, Opinion Article, published in The Indian Express, New Delhi, 11/07/2023.
2. An equitable and long-lasting way to resolve inter-state river water disputes, Invited Article by Sharad K Jain, Murthy Bhallamudi, Ligy Phillip, The Hindustan Times, New Delhi, 24/07/2023.

C Training Courses/ Workshops Organized: total about 50

C1. Keynote lectures/invited talks delivered

During the last 10 years, I have delivered about 65 Keynote lectures/invited talks.

C2. Teaching and Lecturing experience

- a) Teaching experience of more than 6 years at IIT Roorkee - taught B.Tech., M.Tech., and PhD students at the Civil Engineering Department and at Dept. of WRDM, IIT Roorkee.
- b) Delivered many lectures in two courses at the Louisiana State University, USA.
- c) I have delivered nearly 200 lectures in various training courses in the past 10 years.
- d) Delivered Lectures as the National Faculty under a GIAN (Global Initiative of Academic Networks) training course, sponsored by the Ministry of Human Resources Development, at GB Pant Univ., Pantnagar, and in the International Summer and Winter Term (ISWT) course "Hydrology and Climate Change" at IIT Kharagpur.

C3. Courses Developed

Developed a web-course entitled 'Hydrological Measurements and Analysis of Data' (<http://nptel.ac.in/courses/105107129/#>) under NPTEL (National Programme on Technology Enhanced Learning).

Developed a course "Climate Change and Its Impact on Water Resources", at the Civil Engineering Department, IIT Roorkee.

C4. Member of Indian Delegations

I was a member of Indian delegation to

- COP-22 (Conference of Parties, UNFCCC) held in Morocco in 2017.
- 2nd Indo–Japan workshop on 'Disaster Risk Reduction' held in Tokyo in Sep. 2018.
- Meetings of ISO Technical Committee TC 113 held at Portland (USA) in 2010 and at Tokyo (Japan) in 2015.

C5. Mentoring of External Scientists

Mentored a fellow under DST INSPIRE program, a Women Scientist fellow (WOS-A of DST), a NAM fellow from South Africa, and guided a Scientist of ICAR-CIFRI, Barrackpore.

C6. Thesis Guidance and Examinership of PhD thesis

Ph.D.: Co-guided three students. One thesis work is in progress.

M.Tech.: Co-guided theses of seventeen students.

Examined PhD thesis of about 17 students from India and one each from Australia and Malaysia. Examined a large number of Master's thesis.

D. Management of R&D

D1. Contributed as Director and Scientist at NIH.

As Director (NIH), took initiative to fill vacant positions, process promotion cases, strengthen laboratories, upgrade the infrastructure, strengthen the regional centers, encouraged and supported the scientists to write research proposals and publish their research in reputed journals. Also prepared and processed a proposal to establish a Unesco Center at NIH.

Networking by way of MoUs and collaborative research

At NIH, vigorously tried to network and sign MoUs with a number of reputed institutes for collaborative research. Some of the organizations with whom MoUs were signed are: IIT Roorkee; Center for Ecology and Hydrology, Wallingford (UK); National Institute of Urban Affairs (NIUA) New Delhi; ESSO-National Centre for Earth Science Studies; National Institute of Disaster Management, New Delhi; Vassar Labs IT Solution, Hyderabad; CSIR- National Environmental Engineering Research Institute (CSIR-NEERI), Nagpur; Jawaharlal Nehru Univ., New Delhi; and Himalayan University Consortium – ICIMOD.

Also forged alliances with academic/research institutes abroad, such as International Water Management Institute, Sri Lanka, and IHE Delft Institute for Water Education, The Netherlands.

Good progress was made on joint studies with some of these organizations.

Time was also spent on employee welfare measures such as Post-retirement Medical Scheme for NIH staff, pension scheme for employees, etc.

Served as the Director General, National Water Development Agency (NWDA), Ministry of Jal-Shakti, New Delhi, on a short-term (additional charge) assignment.

D2. As NEEPCO Chair Professor at IIT Roorkee (April, 2009 – April 2012)

As NEEPCO Chair Professor at IIT Roorkee, I tried to forge a close relation between academia (IIT R) and industry (NEEPCO, Shillong). Training courses were organized for NEEPCO officers at IIT Roorkee and at their offices in New Delhi, Guwahati, and Shillong. Visits of NEEPCO officers to IITR and IITR faculty to NEEPCO offices were organized so that the various technical problems of NEEPCO faculty can be addressed.

D3. Conferences Organized

I was the Organizing Secretary of the International Conference: Water, Environment, Energy, and Society (WEES-2009), held at New Delhi, January 12-16, 2009.

Conference chair, International Ground Water Conference (IGWC), 2017.

I have been involved in organizing more than 15 conferences as chair/member of various committees.

D4. Management Related Services to NIH (Important tasks)

Contributed as the Head, Water Resources Systems Division for more than 15 years; Coordinator, Western Himalayan Regional Center for about 10 years; Coordinator, Center for Flood Management Studies Guwahati; Chairman, Group Purchase Committee; Chairman, Library Advisory Committee; Chief Vigilance Officer; Head (Maintenance Division); and in many other roles.
