Pawan Labhasetwar
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Profile

Doctorate in Environmental Engineering (graduation in Civil Engineering) with wide-ranging experience in research and consultancy in environmental impact assessment. Strong problem-solving skills, out-of-the-box thinking, working in difficult areas with needy, and a perfect team member with excellent relations with government, industries and non-government officials. Adaptability to various subject areas, multidisciplinary in nature as demonstrated in shift from environmental science and engineering to specialty in environmental impact assessment, environmental audit and water and environmental sanitation. Worked in CSIR-NEERI in various capacities since January 1989.

Fluent in English and experience of working in UN Organization

Employment history

Grade/Post	From	To	Estt / Lab / Instt.
Chief Scientist	July 20, 2016	December 31, 2023	NEERI, Nagpur
Senior Principal Scientist	July 20, 2011	July 19, 2016	NEERI, Nagpur
Scientist Gr IV (4) or Principal Scientist	January 1, 2008	July 19, 2011	NEERI, Nagpur
Water and Environmental Sanitation Officer	October 19, 2005	December 31, 2007	UNICEF, Bhopal (On deputation), India
Scientist Gr IV (3)	July 20, 2002	October 18, 2005	NEERI, Nagpur
Scientist Gr IV (2)	July 20, 1997	July 19, 2002	NEERI, Nagpur
Scientist Gr IV (1)	July 20, 1992	July 19, 1997	NEERI, Nagpur
Senior Research Fellow	January 30, 1989	July 17, 1992	NEERI, Nagpur
Lecturer (Contributory)	September, 1988	January 27, 1989	Government Engineering College, Sagar (MP)

Education and qualifications

Degree	Year of passing	University/Instt.	Subject
Ph.D.	2008	Rashtrasant Tukdoji Maharaj University, Nagpur	Environmental Engineering
P. G. Diploma in Management	2004	Indira Gandhi National Open University	Business Management
M.E.	1988	Rani Durgavati University, Jabalpur	Environmental Engineering
B.E.	1986	Rani Durgavati University, Jabalpur	Civil Engineering

Professional experience

Scientist and Head, Water Technology and Management Division, NEERI, Nagpur, India (and other designations) **Jan 2008 – Dec 2024**

- Detailed Environmental Site Assessment and Remediation of Contaminated ground water and Soil and control the further spread of the Contamination for chemical industries
- Detailed Environmental Site Assessment and Action Plan for Remediation of groundwater for distillery
- Assessment of impacts of construction activity on ecology/Eco-system of reservoirs and to suggest corrective/remedial measures
- Sustaining Small-Scale Water Systems – Integrating Local Knowledge and Co-Learning for Preserving Aquatic Ecosystems and Improving Quality of Life in islands of Maldives
- Environmental Assessment and Mitigation Measures for Floating Solar Plant on the Ecology and Environmental Status of Reservoir
- Impact On Peak Factor, Water Quantity and Quality at Consumer Ends Due to Continuing Use of Underground Storage Sumps After Conversion of Intermittent to Continuous Water Supply
- Management of Water Sources for their Suitability for Designated Use and Delineation of Treatment Options
- Affordable IoT enabled Water Service Delivery Measurement and Monitoring Sensing System for rural development
- Sustainable Water Resources Management through Conservation and Utilization Plan for the Rivers of a District based on watershed management approach
- Assess impacts of Development Activities on a Reservoir as per the directives of Hon'ble High Court of Madhya Pradesh
- Laboratory and Field Scale Functionality Assessment of Water Treatment Technologies for Jal Jeevan Mission (CSIR-NEERI is the only agency recognized by Jal Jeevan Mission for evaluation of treatment technologies)
- Laboratory and Field Scale Functionality Assessment of Water Treatment Technologies
- Development, prototyping and field demonstration of continuous Electrolytic Defluoridation Technology
- Development of Capacity of engineers and other functionaries on Climate Change adaptation in Water Supply Sector in Maharashtra
- Preparation of Detailed Project Report (DPR) on planning, designing and developing national level state-of-art R&D water quality laboratory, and its allied work at SPM-NIWAS, Kolkata for Department of Drinking Water and Sanitation (DDWS), Government of India
- Scientific and Technical Consultancy for Environmental Damage Cost Assessment due to Ash Dyke Breach of a thermal power plant
- Performance Evaluation of the water treatment units based on multiple technologies e.g. ozonation, silver ionization, textile filters etc. for provision of safe drinking water Supply

- Scientific and Technical Consultancy for Environmental Damage Cost Assessment due to Ash Dyke Breach at a thermal power plant
- Preparation of Water Quality Trend Report (2013-2017) under National Water Quality Monitoring Programme (NWMP) for Central Pollution Control Board, Government of India
- Understanding Water Safety with Focus on Membrane/Reverse Osmosis (RO) based plants and Water ATMs for Drinking Water Supply in Select Habitations
- Administer and Manage Laboratories for Chemical and Bacteriological Testing of Drinking Water Sources in all Districts [75] of Uttar Pradesh (the largest state of India)
- Training programmes on various aspects related to water and sanitation
- Development of a Strategy to roll out Water Safety Plan in a district (study supported by UNICEF in Dungarpur District, Rajasthan, India)
- Household Water Treatment and Storage Technology for Safe Water
- A Detail Study to Understand the Non-Putrefying Property of River Ganga in both Water and Sediments
- Local Treatment of Urban Sewage Streams for Healthy Reuse (LOTUS) – collaborative project along with partners from Government of Netherlands
- Predictive approach for early detection of contaminant zone in intermittent and continuous water supply systems and health impacts
- Piloting of Sanitation safety planning tool in an urban center (Nagpur)
- Impact of Magic Pits (type of a pit attached to toilet in household/households) on Ground Water Quality and Quantity
- Studies on groundwater quality of Maldives Island to check feasibility for drinking purposes, guideline preparation, and staff training (supported by WHO, Maldives)
- Assessment of Water Quality and sediment Analysis to understand the special properties of Ganga River
- Natural Water Systems and Treatment Technologies to cope with water shortages in India (NaWaTech), a joint India-EU project
- Introduce and Implementation of Water Safety Plans (WSP) in Healthcare Facilities
- Assessment of Ground Water Contamination in and around Organochem Industry
- Integration of Water Safety Plan and Household Water Treatment and Safe Storage in Open Defecation Free village in India
- Crowdsourcing Water Quality: Using Mobile Technology and Rapid Microbiological Tests to Assess Drinking Water Risks in Rural India
- Technological eco-innovation for the quality control and the decontamination of polluted waters and soils
- Integrated hydrogeological studies in and around Jamnagar Refinery Complex, Jamnagar
- Impact assessment of ash pond on Groundwater Quality in the surrounding area of Mine Pit of Thermal Power Plant

- Development and application of surfactants for reduction in evaporation losses from surface water reservoir
- Water Quality Management Plan for the Tehri Dam Reservoir
- Impact assessment for Pilot CPV Project
- Develop and implement natural water and wastewater treatment systems
- Preparation of water security plan for a district (Rajnandgaon, Chhattisgarh) based on micro-watershed delineation
- Desk study of artificial recharge using treated wastewater
- Design and implementation of iron removal plants
- Preparation, implementation and evaluation of water safety plan
- Water safety plan for rural areas in Madhya Pradesh
- Improvement in water and environmental sanitation in Madhya Pradesh
- Preparation of Guidance Manual for water treatment technologies for rural water supply and management
- Ground water quality assessment in the vicinity of ash ponds around thermal power plants
- Short and long term measures to improve performance of water treatment plants
- Design of water treatment systems in emergencies
- Design and Development of Sustainable Remediation Process for Mitigation of Fluoride Contamination in Groundwater and Field Application for Domestic Use
- Design, Development and Field Testing of Solar energy Based Electrolytic Defluoridation Unit for Potable Water Supply
- Design and Development of Sustainable Remediation Process for Mitigation of Arsenic Contamination in Ground Water
- Assess the Impacts of Climate Change on Water Demand at National Level for the Short, Medium, to Long-Term Time Line
- Water quality monitoring and surveillance
- Greywater water treatment and reuse in urban and rural areas
- Optimisation of ground water development in water scarce areas
- Guidance Manual for water quality monitoring and assessment
- Quantification of methane emissions from water bodies such as lakes
- Undertake field experiments to determine methane emissions from lakes
- Impact Assessment due to industrial operations on water quantity and quality
- Rapid Assessment of Drinking Water Quality – Literature Review for WHO, Geneva
- Environmental Friendly Strategy for Waste Management in India Utilising Cement and Concrete Production Technology
- Strategic environmental assessment for petroleum refinery operation in Gujarat State, India
- Strategic environmental assessment for Sustainable City Planning for Pune, project sponsored by Swedish International Development Agency (Sida)

UNICEF, Bhopal, India
Water and Sanitation Officer **Oct 2005 – Dec 2007**

- Designed, developed, implemented and advocated Wisewater management involving greywater treatment and reuse for toilet flushing and gardening in residential schools for marginalised communities.
- Developed community based wisewater management aimed at sustainability of drinking water sources by insuring evidence based groundwater recharge, development of surface water resources, rainwater harvesting, rejuvenation of existing water resources and greywater reuse
- Development of Quantitative Chemical Risk Assessment (QCRA) for determining fluoride intake through various sources such as water and food, implementation in two districts of Madhya Pradesh (India) and documentation
- Integrated Fluorosis Mitigation (IFM) by using simple solution such as rainwater harvesting and fluoridated groundwater, nutrition supplementation and household defluoridation. This has been implemented in two districts of Western Madhya Pradesh by using government funds
- Participated in Multi-District Assessment of Water safety (MDAWS) for determining chemical and microbial contamination of drinking water sources and implementing preventive and curative measures such as repair of handpump platform
- Presentation of field implementation related to water and environmental sanitation in national and international forum
- Coordination with state, national and international government and non-government organizations for implementation of programmes such as TSC, IFM, MDAWS, WWM etc.

Scientist, NEERI, Nagpur, India **July 1992 – Oct 2005**

- Development of software 'Integrated Air Quality Model" for predicting change in ambient air quality due to industrial emission sources
- Extensive application of air quality modeling using Gaussian plume dispersion modeling (ISCST3, OCD, FDM etc.) and numerical models like (TAPM)
- Completed doctoral thesis on "A strategic review and assessment of Indian petroleum refining industry sector" by measuring and estimating emissions to air, water and land from Indian refineries through field studies, comparing with International refineries, predicting and evaluating change in environmental quality, design and cost estimation of pollution control measures
- Prepared EA and SA reports based on guidelines of the World Bank, Asian Development Bank and other financial institutions
- Led the environmental audit for the World's largest grassroots refinery by studying compliance of emissions to air, land and water emissions to the stipulated standards
- Prepared technical proposals for EIA, environmental audit, strategic environmental assessment for National and International organizations (won contract from Department of Public Works and Highways, Philippines for training on EIA, Risk Assessment for gas based Power Plant in UAE)

- Human resource management by leading team of about 40 scientists/technical assistants/project assistants/field staff for start-up, monitoring, desk based, report preparation and defense of EIA projects
- Founder Secretary of Indian Association for Environmental Assessment (IAEA), Member of International Association for Impact Assessment (IAIA), Life Member if Institution of Engineers (India), Institution of Chemical Engineers, Indian Association for Environmental Management and Indian Water Works Association (IWWA)
- Member of management Council of NEERI for management and direction to institutional priorities related to research, development and implementation
- Led and participated in almost 150 environmental assessment projects for petroleum refineries, power plant, onshore and offshore oil and gas exploration and development, crude and petroleum product pipeline, chemicals and fertilizer, petrochemicals, hydroelectric, multipurpose dam, cement, mining, port and harbour, Special Economic Zones (SEZs), large construction projects, highway and railways
- Led the project on "Preparation of EIA Guidance Manual for Six Sectors" of Ministry of Environment and Forests supported by the World Bank as part of Reengineering of Environmental Clearance Process in India. Guidance Manuals were prepared for six sectors by considering the changes in environmental clearance process
- Training coordinators and lead faculty for industries, government and non-government organizations, consultants, practioners on EIA, environmental quality monitoring, environmental quality modeling, pollution control measures
- Specialised in preparation of Catchment Area Treatment, Dam break analysis and emergency preparedness, muck disposal and bio-diversity conservation plans inclusive of implementation plan and for hydroelectric/multi-purpose dam projects
- Evaluated wastewater treatment plants and air pollution control facilities for petroleum refineries, chemical and fertilizer, power, petrochemical plants
- Specialised in application of air quality, water quality and noise models for predicting impacts of developmental projects

Senior Research Fellow **Jan 1989 – July 1992**

- Environmental quality monitoring particularly ambient air, noise and water
- Stack and fugitive emission monitoring
- Evaluated wastewater treatment plants
- Prepared proposal for EIA of developmental projects
- Prepared EIA reports for small developmental projects

Contributory Lecturer **Sept 1988- Jan 1989**

- Teaching of undergraduate civil engineering students
- Project report preparation for final year civil engineering students

Publications in national/international journals

Published 100 papers in SCI Journals, 100 papers in proceedings of National/International Conferences/Workshops/Training Programmes, 250 Technical Reports, Contribution in 12 Books and Guidance Manuals, One Book

Pl refer Google Scholar ID of Pawan Labhasetwar
https://scholar.google.co.in/citations?user=mzJdAlkAAAAJ&hl=en

Best ten publications

I. Prediction modeling and mapping of groundwater fluoride contamination throughout India, JE Podgorski, **P Labhasetwar**, D Saha, M Berg
Environmental Science & Technology 52 (17), 9889-9898 151 2018

II. Greywater reuse in residential schools in Madhya Pradesh, India—A case study of cost–benefit analysis, S Godfrey, **P Labhasetwar**, S Wate
Resources, Conservation and Recycling 53 (5), 287-293

III. Implementation of water safety plan for a large-piped water supply system, A Nijhawan, P Jain, A Sargaonkar**, PK Labhasetwar**
Environmental monitoring and assessment 186, 5547-5560

IV. Access to household water quality information leads to safer water: a cluster randomized controlled trial in India, Mallory Trent, Robert Dreibelbis, Arjun Bir, Sachchida Nand Tripathi, **Pawan Labhasetwar**, Pranav Nagarnaik, Andrew Loo, Robert Bain, Marc Jeuland, Joe Brown
Environmental science & technology 52 (9), 5319-5329

V. Implementation of water safety plan for a large-piped water supply system, A Nijhawan, P Jain, A Sargaonkar, **PK Labhasetwar**
Environmental monitoring and assessment 186, 5547-5560

VI. Microbial water quality improvement associated with transitioning from intermittent to continuous water supply in Nagpur, India, Aaron Bivins, Sarah Lowry, Sonal Wankhede, Rajashree Hajare, Heather M Murphy, Mark Borchardt, **Pawan Labhasetwar**, Joe Brown
Water Research 201, 117301

VII. Sustainable groundwater treatment technologies for underserved rural communities in emerging economies, Boving Thomas, Craver Vinka, **Labhasetwar Pawan**, Sabatini David,
Science of The Total Environment, Volume 813, 2022, 152633

VIII. Distribution network assessment using EPANET for intermittent and continuous water supply, S Mohapatra, A Sargaonkar, **PK Labhasetwar**
Water resources management 28, 3745-3759

IX. Membrane distillation crystallization technology for zero liquid discharge and resource recovery: Opportunities, challenges and futuristic perspectives, A Yadav, **PK Labhasetwar**, VK Shahi

Science of The Total Environment 806, 150692

X. The risk of cancer as a result of elevated levels of nitrate in drinking water and vegetables in Central India, P Taneja, **P Labhasetwar**, P Nagarnaik, JHJ Ensink
Journal of water and health 15 (4), 602-614

Books/manuals authored/edited

Sl. No	Title of Book/Manual	Editors	Year of Pubn	Authors	Title of the Chapter	Publisher
1.	Sanitation and Health in Rural India : Problems and Management Options		2010	Godfrey Sam, Labhasetwar Pawan, Wate Satish	Greywater reuse in rural institutions and households	National Institute of Administrative Research, Mussoorie, India
2.	Handbook on Drinking Water Treatment Technologies, First Edition (Released by Minister – Drinking Water and Sanitation	Lead Contributing Author	2011			Ministry of Drinking Water and Sanitation, Government of India
3.	Handbook on Drinking Water Treatment Technologies, Second Edition	Lead Contributing Author	2013			Ministry of Drinking Water and Sanitation, Government of India
4.	Uniform Drinking Water Quality Monitoring Protocol	I am member of the Expert Group and Coordinated drafting of the document				Ministry of Drinking Water and Sanitation, Government of India
5.	The Globalisation of Cost-benefit analysis in Environmental Policy	Richard Revesz & Michael Livermore	2012	Pawan Labhasetwar	Cost –benefit analysis of water resource projects in India	Oxford University Press, USA
6.	Integrating Health Impact Assessment with the Policy Process	Monica O'Mullane	2013	Ben Cave, Urmila Jha-Thakur, Mala Rao, Pawan Labhasetwar,	Health in Impact Assessment and Emerging Challenges in India	Oxford University Press, UK

Sl. No	Title of Book/Manual	Editors	Year of Pubn	Authors	Title of the Chapter	Publisher
				and Thomas Fischer		
7.	WHO International Scheme to Evaluate Household Water Treatment Technologies : Harmonized Testing Protocol: Technology Non-Specific	I am one of the Independent Advisory Committee members in drafting the publication	2014			World Health Organisation, Geneva
8.	Water Safety in Distribution Systems	David Cunliffe	2014	Pawan Labhasetwar and Aabha Sargaonkar	Application of predictive model for water distribution system risk assessment in India	World Health Organisation, Geneva
9.	Aqua nano-technology: Global Prospects	David E, Reisener and T. Pradeep	2015	Nitin K. Labhsetwar, S. Jagtap Lunge, Amit K. Bansiwal, Pawan K. Labhasetwar, Sadhana S. Rayalu, and Satish R. Wate	Technological Developments in Defluoridation of Water	CRC press (Taylor & Francis Group)
10.	Microbial Water Quality Testing: Considerations in developing a monitoring strategy in resource-limited settings	I am one of the Core Group members in drafting the publication				World Health Organisation, Geneva
11.	Advances in Civil Engineering and Infrastructural Development	L M Gupta Maya Ray Pawan Kumar Labhasetwar	*2019*			Springer

Sl. No	Title of Book/Manual	Editors	Year of Pubn	Authors	Title of the Chapter	Publisher
12.	Membrane-based point-of-use drinking water treatment systems		*2023*	Pawan K. Labhasetwar, Anshul Yadav:		IWA Publishing. ISBN: 9781789062717, eISBN: 9781789062724.

Honors/Awards/Recognitions

1. **Nominated one of the Editors-in-Chief of Journal of Water Supply, International Water Association Publication, 2023**
2. Jury Member/ Technical Expert of Water Innovation Challenges for Startups and Students teams, organized by Atal Innovation Mission - Innovation Center Denmark (AIM-ICDK) 2.0, 2022
3. **Member of Guidelines Development Group (GDG) to review Addendum and Revision of "Guidelines for Drinking Water Quality" of World Health Organisation, 2022**
4. Jury Member/ Technical Expert of Water Innovation Challenges for Startups and Students teams, organized by Atal Innovation Mission - Innovation Center Denmark (AIM-ICDK), 2021
5. **Received "Jal Nirmalata" Award from Indian Water Works Association (IWWA) for exemplary contribution in the field of water specifically in improving the quality, 2017**
6. Jury member for the FICCI Water Awards, 2016
7. Invited for Key Note Address in Fourth OU International WaTER Conference and International Water Prize Award Ceremony on Sept. 21-23, 2015 in Norman, Oklahoma, USA
8. **Jury member for selecting prestigious Oklahoma University Water Prize for the year 2015 (Ranked first in terms of Award Money i.e. USD 25,000 for prize in water and sanitation sector in developing countries), 2014**
9. Inclusion of Hand-pump Attachable Iron Removal System selected for DST-Lockheed Martin India Innovation Growth Program-2013 among top 50 innovations in India out of 1500 applications, 2013
10. **Recipient of Project Innovation Award (Development), Applied Research – Water – Winner of International Water Association (IWA) for NEERI-ZAR technology, 2012**
11. **Recipient of Project Innovation Award (Development), Applied Research – Water – Honour Winner of International Water Association (IWA) for Solar Energy based Electrolytic Defluridation technology, 2012**
12. **Recipient of DST-Lockheed Martin Innovation Growth award from FICCI for the technology "Solar Energy based Electrolytic Defluridation", 2012**

13. Water Technology and Management Division (headed by me) received NEERI Foundation Day Award 2013 for transferring technology on Electrolytic Defluoridation to 6 Licensees in 2012

Professional affiliations

1. Life Member, Institution of Engineers (India)
2. Life Member, Institution of Chemical Engineers,
3. Life Member, Indian Association for Environmental Management (IAEM)
4. Life Member, Indian Water Works Association (IWWA), and Honorary Secretary, Indian Water Works Association, Nagpur Centre (for select period)
5. Founder Secretary, Indian Association for Environmental Assessment (IAEA)
6. Member, International Association for Impact Assessment (IAIA) (for select period)
7. Member, International Water Association (IWA) (for select period)
8. Member, TERI's Academic Advisory Board in the Environmental Sciences (Select period)
9. Associate Editor, Water Science and Technology, A Journal of International Water Association, United Kingdom (only Associate Editor from South Asia and one of the six Associate Editors from Asia when selected) (for select period)
10. **Associate Editor, Editor and now Editor-in-Chief of Water Science and Technology – Water Supply, A Journal of International Water Association, United Kingdom (only Associate Editor from South Asia and one of the six Associate Editors from Asia when selected)**
11. Associate Editor, Water Practice and Technology – Water Supply, A Journal of International Water Association, United Kingdom (only Associate Editor from South Asia and one of the six Associate Editors from Asia when selected) (for select period)
12. International Editor, Journal of Water, Sanitation and Hygiene for Development which is dedicated to the papers from developing countries
13. Member, Editorial Board of Journal of Indian Water Works Association (select period)
14. **Chairman, Committee of Bureau of Indian Standards (BIS) on "Point-of-use water purification system"**
15. Coordinator, Key Resource Centre (KRC) of Ministry of Drinking Water and Sanitation, Government of India
16. Member, Expert Group on Defluoridation Techniques of Indian Council for Medical Research (ICMR) under Fluorosis Mitigation Programme
17. Member, State Level Scheme Sanctioning Committee (SLSSC) of Public Health Engineering Department, Madhya Pradesh, Bihar and Jharkhand
18. Member, Committee to prepare Uniform Drinking Water Quality Monitoring Protocol by Ministry of Drinking Water and Sanitation, Government of India
19. Member, Technical Advisory Committee: S&T Communication on "Eco & WaSH Futures" of Department of Science and Technology, Government of India

20. Member, Committee to revise Uniform Water Quality Monitoring Protocol for Water Quality Assessment Authority (WQAA), Ministry of Water Resources, Government of India
21. Member, Expert Team constituted by Government of West Bengal for quick evaluation of the overall management and functioning of Decentralised Water testing Laboratories in West Bengal
22. Core Group Member, Fluoride Knowledge and Action Network constituted by INREM Foundation and Arghyam
23. Member, Indian National Committee for International Hydrological Programme of UNESCO
24. **Head, WHO Collaborating Centre for Water and Sanitation which is 1 among 13 in the world**
25. Member, Water Quality Task Force of the WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation (JMP)
26. Member, Core Group on Water Quality and Health of International Water Association
27. Member, Independent Advisory Committee (IAC) of WHO, Geneva on Household Water Treatment and Safe Storage (HWTS)
28. Member, Core Group of Microbial Water Quality Testing: Considerations in developing a monitoring strategy in resource-limited settings of WHO, Geneva
29. Think Tank Member, EWAS (International Centre for Water and Management Services) South Asia, a constituent of CEWAS Willisau (Switzerland based non-profit organization)
30. Jury, Annual Water Digest Awards for consecutive six years
31. Member of Steering Committee for the implementation of Corporate Social Responsibility (CSR) Policy associated with Irrigation Sector, Government of Maharashtra
32. **Member, Guideline Development Group (GDG) for the Addendum/Revision in WHO Guidelines for Drinking-water Quality, 2022**
33. Member, Technical Unit (TU) in the office of Principal Scientific Advisor to Government of India to evaluate water/wastewater treatment technologies for application in rural areas, 2018
34. Jury Member/ Technical Expert of Water Innovation Challenges for Startups and Students teams, organized by Atal Innovation Mission - Innovation Center Denmark (AIM-ICDK), 2021
35. Member, Technical Committee of CPHEEO, Ministry of Housing and Urban Affairs, Government of India to revise Water Supply and Treatment, 2021
36. Technical member, Dahanu Taluka Environment Protection (Authority) constituted by Ministry of Environment, Forests and Climate Change, Government of India, 2022
37. Jury Member/ Technical Expert of Water Innovation Challenges for Startups and Students teams, organized by Atal Innovation Mission - Innovation Center Denmark (AIM-ICDK) 2.0, 2022
38. Member, Screening Committee constituted by Ministry of Housing and Urban Affairs, Government of India for screening of proposals/applications under a "Startup Gateway" – a perpetual online platform-based startup partnership programme in 2022 and 2023

39. Member, Editorial Committee Member of CPHEEO, Ministry of Housing and Urban Affairs, Government of India to revise Water Supply and Treatment, 2023

Technology/Process/Product development

Title	Year of Development	Contribution in the development
Electrolytic defluoridation – school based	2011-2013	Reactor was designed by modifying electrodes, current density and voltage to treat 200-250 litter water per batch
Natural wastewater treatment system for a township (100 m^3/day)	2013-2014	Assisted in plant implementation
Natural wastewater treatment system for a garden (100 m^3/day)	2013-2015	Assisted in plant implementation
Grey water treatment using vertical wall	2016	Optimized hydraulic loading for vertical wall and lab/full-scale plant installed
Iron removal plants	2011-13	Designed and prepared BoQ of 250 m^3/day capacity plant
Electrolytic defluoridation – continuous mode	2016-2020	I worked on providing technical inputs to operate on continuous mode by controlling and optimizing flow to EDF unit. Prototype was developed.

Field implementation / Technology diffusion

I assisted in modification of technology and coordinated implementation and diffusion of the technologies:

i) Electrolytic defluoridation
ii) Hand pump attachable iron removal
iii) NEERI-ZAR
iv) Chemo-defluoridation
v) Greywater treatment and reuse
vi) Sewage treatment

i) Electrolytic Defluoridation

- Removal of fluoride by active species of hydroxide of aluminium produced by passing DC power through aluminium electrode
- Simple to fabricate, easy to operate with minimum maintenance
- Suitable for treatment of raw water with fluoride concentration up to 10 mg/L
- Treatment cost up to Rs 30 per 1000 L
- Technology transferred to 12 MSMEs
- Nearly 150 EDF plants are installed by State Water Supply Departments providing safe water to 100000 persons

ii) Hand Pump Attachable Iron Removal

- Oxidation of dissolved iron using atmospheric oxygen, precipitation, sedimentation and filtration using sand filter. All the operations in a single unit
- Continuous operation system with 1 m^3/hour hydraulic loading
- Operation range : 1-30 mg/L
- Can provide 40 lpcd iron free water to 250 persons
- Single Unit System and can be installed on existing hand pumps
- Minimum maintenance with negligible operational cost
- Pre-fabricated FRP units can be installed quickly
- 100 plants installed in Chhattisgarh State
- Unit cost : RCC – Rs. 60,000 and FRP - Rs. 1,00,000
- State Rural Water Supply Departments used know-how for construction through SMEs particularly in the State of Chhatisgarh

iii) NEERI-ZAR

- Water purification system suitable for potable water supply particularly under emergency situation with a wide range of flood water quality
- Disaster management tool for drinking water supply under flood affected situations
- A typical unit, with two 100 L vessels, can serve about 20-30 persons, when operated for 10 hours a day, on the basis of 6-10 litres per capita/day for drinking and cooking purposes

- Removes turbidity and suspended matter as well as the micro-organisms. No change in the dissolved mineral concentrations in raw and filtered water
- Can be used to treat the pond/lake water for the villages or small colony situated at the isolated places
- Can work as Domestic Iron Removal Unit
- Cost of the unit Rs. 6000 : Operating cost Rs. 3 per 100 L
- Technology is available for free of charge to everybody who wants to use for societal venture

iv) Chemo-defluoridation

- Reduces the fluoride concentration in water to <1 mg/L
- Suitable for treating the water up to fluoride concentration of 10 mg/L
- No leaching of fluoride from sludge back into the water at normal pH range (6.5-8.5)
- Most suitable for small fluoride affected villages where community water treatment plant is not economically feasible
- Unit cost Rs. 3000-4000 and operating cost Rs. 0.05 paisa per litre

Sakhara Village, Yavatmal District

v) Greywater treatment and reuse – filtration technique

Following treatment units are provided in filtration based greywater treatment system designed for Rajbhavan, Mumbai and CPWD construed housing colony, Raipur:

- Pre-Treatment : Coarse Filter using foam – removal of froth generated from bathroom, Odor, some of settleable solids, coarse material
- Step Aeration – Production of dissolved oxygen
- Screen - Floating matter, suspended matter
- Equalization tank/Settling tank - Settle able solids
- Filtration - Down Flow – Up Flow filter - Turbidity, suspended solids, color, bacteria and some amount of BOD
- Storage & Disinfection – For pumping to Syntex tank for toilet flushing and irrigation uses and bleaching powder for removal of bacteria, odour etc.

vi) Greywater treatment and reuse – Vertical wall

The vertical wall is based on the principles of hydroponics where the plants are rooted in porous material instead of soil. Thus, a system designed to have long retention times tend to reduce variability and improve performance. Moreover, using hydroponics increases the growth rate of plants by 30-50% compared to soil plants under similar conditions. The components of a vertical wall comprised of frame pots made up of PVC material with UV stabilizer. The porous media fillers clay aggregate, cocopeat, and activated carbon that are light in weight have been found to be suitable for such systems. The plant species (Alternanthera green, Syngonium, Asparagus Sprengeri, Roheo etc.) selected based on color-combination, texture, are suitable for wastewater treatment, lower water requirement etc. The pots arranged vertically in a series, allow the inflow of grey water with automated drip irrigation system. The system is completely gravity based, thus outflow i.e. treated grey water, is collected at the bottom by a drain pipe. The treated effluent can be reused for non-potable purposes (gardening, toilet flushing etc.).

A perforated pipe (along with drippers) was used for feeding the pots, allowing grey water to flow through vertical displacement by gravity. The loading rate was adjusted from 10 L to 100 L per day, resulting in the optimum hydraulic loading rate (67 L/m2/day) for the treatment system.

Design details of the Vertical wall area: (Assuming frame capacity as 5.5L/day)

Criteria	100 L capacity	1000 L capacity
No. of frames required	100/5.5= 18 nos.	1000/5.5= 181 nos.
Frames/panels arrangement	3 panels (Mild Steel); 2 rows; 3 columns	4 panels (Mild Steel); 3 rows; 18 Columns
Actual No. of frames (1 Frame (size 450X150cm) consist of 3 pots))	2x3x3=18 nos.	18x3x4=216 nos.
Total capacity of the wall system	18*5.5=99 L/day (approx.100 L/day)	216*5.5=1188 L/day (>1000 L/day)

vii) Sewage Treatment Technologies

Sites	Site Location	Details of Treatment system implemented
Site-1	Ordnance Factory Estate, Ambajhari, Nagpur	Screen Chamber and Oil & Grease Trap, Primary Clarifier, Upflow Attached Growth Anaerobic Filter, Horizontal subsurface constructed wetlands, Dual Media Filter, Activated Carbon Column, UV Disinfection, Sludge Drying Reed Beds (SDRB), French Reed Bed (FRB), Short Rotation Plantation (SRP) Total volume: 100 m^3/day - Intended for reuse in gardening

Sites	Site Location	Details of Treatment system implemented
Site-2	NIT Garden , Dayanand park, Jaripatka, Nagpur	Anaerobic System and combinations of Horizontal and Vertical flow Constructed Wetlands Total volume: 100 m^3/day - Intended for reuse in gardening
Site-3	COEP Hostel Campus, Pune	Decentralized treatment system coupling gravity based anaerobic system and aerobic system in the form of a vertical flow constructed wetland Total volume: 180 m^3/day - Intended for reuse in gardening and flushing
Site-4	SBR and MBR Treatment Plant, Amanora Park Town, Pune	Aerobic Biological Treatment with compact Sequential Batch Reactor (SBR) & Membrane Bioreactor (MBR) technologies. Total volume: 40 m^3/day - Intended for reuse in gardening and flushing
Site-5	Indradhanushya (Citizen Environment Cell, PMC), Near Mhatre Bridge, Pune	Eco Filtration Bank. This system is being implemented by Shrishti Eco-Research Institute (SERI), also a NaWaTech Partner. The idea is to treat water from nearby Ambil Odha and use the water for gardening. Capacity: 50 m3 per day; Intended for reuse in gardening
Site-6	Maharashtra Jeevan Pradhikaran Office, Pune	Demonstration unit comprising of 2 wall-mounted vertical garden units holding different plants. Research whether grey water from office spaces can be treated effectively by such systems Capacity: 250-300 litres/ day Total area 2 m^2; Intended for reuse in gardening

These sewage treatment plants were designed by a colleague as part of NaWaTech project.

No. of Ph.D. students guided

Sl No.	Name of the Student	Title of the Ph.D. thesis	Status
1.	Mr. Vidyadhar Gedam	Sustainable construction and demolition waste management in India	Awarded, 2016
2.	Mr. Sandeep Narnawre	Study on Cost Effective Treatment Technologies for Greywater Reuse in Urban and Peri-urban Areas	Awarded, 2018
3.	Mr. Shashikant Hastak	Critical Assessment of Service Delivery with the Change in Mode of Water Supply from intermittent to continuous in Nagpur City and Preparation of Water Safety Plan	Awarded, 2019
4.	Ms. Nidhi Gupta	Leaching of heavy metals from fly-ash based composites in ground water and soil: a comparison	Awarded, 2019
5.	Ms. Pinky Taneja	Study on nitrate contamination : Health Effects	Awarded, 2019
6.	Ms. Neha Mumtaz	A study on integrated fluorosis mitigation using electrolytic defluridation system	Awarded, 2020
7.	Ms. Akanksha Singh	Occurrence and fate of pharmaceutical and personal care products in the aquatic environment and risk assessment	Awarded, 2020
8.	Mr Anshul Yadav	Membrane distillation process for high saline water and wastewater treatment, 2023	Awarded, 2023
9.	Mr Bipin Vyas	Design, development and performance evaluation of various techniques to improve the evaporation rate of brines in salt ponds	Awarded, 2023

In addition, I guided about 60 M.Tech./M.E./M.Sc. students for completion of master thesis.

Coordination/participation in projects related to National Programmes of Government of India

Sl. No.	Title of the Project	National Programme	Coordinating/Funding Agency	Contribution being made/made
1.	Assessment of Water Quality and sediment Analysis to understand the special properties of Ganga River	Namami Gange	National Mission for Clean Ganga	I was Project Coordinator and lead a team of 40 scientists and project staff to plan, sample, and analyse water and sediment quality
2.	Natural Water systems and treatment Technologies (NaWaTech) to cope with water shortage in urbanised areas in India	Water Technology Initiative	Department of Science and Technology	Being Coordinator of the project, I lead implementation of water and wastewater interventions with support from Indian and European Agencies (7 each)

Sl. No.	Title of the Project	National Programme	Coordinating/Funding Agency	Contribution being made/made
3.	Design, development and implementation of Electrolytic Defluoridation and Chemo-defluoridation technologies	Swastha Bharat Abhiyan	Ministry of Drinking Water and Sanitation (MDWS)/ Ministry of Health, Govt. of India	Replication of these technologies through licensing it to SMEs
4.	Implementation of iron removal plants	Swastha Bharat Abhiyan	Public Health Engineering Department, Chhattisgarh	Implementation of iron removal plants through engineers of PHED, Chhattisgarh
5.	Introduce and Implementation of Water Safety Plans (WSP) in Four Healthcare Facilities	Swastha Bharat Abhiyan	World Health Organisation	Monitoring drinking water quality in Medical College, Private Hospital and Public Health Centres and recommending/ implementing improvement plan for provision of safe water in healthcare facilities
6.	Evaluation of water treatment technologies developed by various Agencies for drinking water quality	National Rural Drinking Water Programme	Rural Drinking Water and Sanitation Department of various States	I am leading group of the scientists in evaluating various water treatment technologies and State Agencies are replicating these treatment units in water quality affected habitations
7.	Key Resource Centre	National Rural Drinking Water Programme	Ministry of Drinking Water and Sanitation (MDWS), Government of India	I coordinated the project and periodically interacting with the concerned officials of MDWS and PHEDs. I am also involved in formulating the course manual and impart training to engineers and chemists of rural water supply agencies
8.	Mentoring of 12th Five-Year Plan "Clean Water : Sustainable Options"	Five-Year Plan	NEERI-CSIR	I was one of the mentors in formulating the plan document on "Clean Water : Sustainable Options" in which about 20 CSIR institutions are involved
9.	Performance standards for point-of-use water treatment system	Swachchha Bharat/Swasth Bharat	Bureau of Indian Standards	I chair the committee of BIS and involved in formulating the standards. This will also create facilities for

Sl. No.	Title of the Project	National Programme	Coordinating/Funding Agency	Contribution being made/made
				evaluating these systems all over the country and certification of the products.
10.	Fluorosis Mitigation Programme	Swastha Bharat	Indian Council of Medical Research	Member of the Expert Group on Defluoridation Techniques and I have reviewed and provided details on defluoridation technologies
11.	Integration of Water Safety Plan and Household Water Treatment and Safe Storage in Open Defecation Free village in India (2015)	Swachchha Bharat/Swasth Bharat/Smart Village	World Health Organisation	Closing the nexus among open defecation, hygiene promotion, water safety and health in rural households
12.	Training programmes for chemists and engineers from rural water supply agencies	National Rural Drinking Water Programme	Ministry of Drinking Water and Sanitation	Prepared training module and conduct training, evaluation of training
13.	Implementation of Water Safety Plan (WSP) in Nagpur City, Maharashtra, India	Smart City Programme	World Health Organisation	Identification of hazards from catchment to consumer, prioritization of hazards and preparation of risk mitigation plan
14.	Preparation of Water Security Plan for Villages in Rajnandgaon district in Chhattisgarh state (2014)	National Rural Drinking Water Programme	UNICEF, Raipur	Preparation of water budget, identification of measures to enhance water availability, sanitary surveillance, water safety plan preparation
15.	Uniform Drinking Water Quality Monitoring Protocol	National Rural Drinking Water Programme	Ministry of Drinking Water and Sanitation	I am lead author of the protocol which is now used as a guidance tool for strengthening drinking water quality monitoring in rural area
16.	Preparation of Water Quality Action Plan for providing safe drinking water in Uttar Pradesh	National Rural Drinking Water Programme	Ministry of Drinking Water and Sanitation, UP Jal Nigam	Member of Central team and visited various districts of Uttar Pradesh and assisted Government of UP to formulate the plan
17.	Technical Evaluation and Preparation of Feasibility Reports for 6 plants based on LTTD technology and	National Rural Drinking Water Programme	Ministry of Drinking Water and Sanitation and Public Works	Member of Central team and visited LTTD and SWRO plants in Lakshadweep islands and prepared feasibility report.

Sl. No.	Title of the Project	National Programme	Coordinating/Funding Agency	Contribution being made/made
	comparison with Sea Water Reverse (SWRO) Osmosis Plants in Lakshadweep islands		Department, Lakshadweep	This has resulted in sanction of Rs 100 Crore to the Islands Administration for setting-up additional LTTD plants
18.	Assess the Impacts of Climate Change on Water Demand at National Level for the Short, Medium, to Long-Term Time Line	National Water Mission	Ministry of Environment & Forests	Collection of secondary data on water demand in various agro-climatic regions, assess impacts on climate change in water demand in long and short term
19.	Development of school based electrolytic defluoridation unit	Jalmani	UNICEF, Madhya Pradesh	Design of school based EDF plants, laboratory based optimization study, installation and monitoring of units
20.	Establishing Fluorosis Mitigation Centres in Hyderabad and Gandhinagar	National Rural Drinking Water Programme	Ministry of Drinking Water and Sanitation	Member of the committee of prepare ToR and assess feasibility of Establishing Fluorosis Mitigation Centres
21.	Multi-district assessment of water safety (MDAWS)	National Rural Drinking Water Programme	UNICEF, State Rural Water Supply Agencies	Training of personnel, supervision, data analysis and document preparation
22.	Total Sanitation Campaign	Swachchh Bharat	UNICEF, PHED, Rural Development Department, Government of Madhya Pradesh	• Preparation of State TSC Strategy • Training in TSC through WALMI and RTCs • Coordination with SEs/EEs in PHED and Deputy Commissioner in PRD for TSC implementation • Participation and presentation in Commissioner's Conference • Appointment of extenders and DCs • Training of DCs • Support for NGPs and technology park construction at Guna • Exposure visits of collectors and PRIs to other states • Presentation at divisional, district and Panchayat • Follow-up on TSC

Sl. No.	Title of the Project	National Programme	Coordinating/Funding Agency	Contribution being made/made
				programme transfer from PHED to PRD • Inputs to the study on "System Strengthening for Effective Behaviour Change Communication in TSC in Madhya Pradesh" • Support in designing and implementing household greywater reuse system • Support in identification of sites and design of Model Anganwadi centres
23.	Wisewater management programme	School Sanitation Progarmme	UNICEF, Public Health Engineering, SC/ST Welfare, Education Departments, Government of Madhya Pradesh	• Design and construction of greywater reuse systems • Advocacy with PHED and SC/ST Welfare Department • Undertaking QMRA and estimation of DALY for greywater • Training and capacity building in WWM • Cost-effectiveness study for WWM • Evaluation of WWM schemes and fine tuning the design • Formulating proposal for integrated household water reuse system • Preparation of water safety plan for WWM • Preparation of Training Module on WWM • Design and estimates of ferro-cement tanks
24.	Preparation of six sector specific EIA Guidance Manuals (2002 – 2004)	Environmental Clearance Procedure	Ministry of Environment and Forests, Government of India	Drafting of EIA Guidance Manual for six sectors namely thermal power plants, hydroelectric projects, pesticides, pharmaceuticals, ports and harbours and petrochemicals

Sl. No.	Title of the Project	National Programme	Coordinating/Funding Agency	Contribution being made/made
25.	Preparation of National EIA Guidance Manual (2002 – 2004)	Environmental Clearance Procedure	Ministry of Environment and Forests, Government of India	Drafting of guidance manual based on revised Environmental Clearance Process, presentation to stakeholders, finalization of guidance manual

Project Leader/Team Member for Inspection/Report submission to Honorable Supreme Court/High Court/National Green Tribunal

i. Member of Technical Committee to represent NEERI to make presentation to and have discussion with Parliamentary Delegation Investing Fire Accident at Visakh Refinery, Visakhapatnam in September, 1997

ii. Team Member of the study "Inspection Report on Mines, Stone Crushers and Pulverisers in Surajkund and Badkal Lake Areas in Haryana" report submitted to Hon'ble Supreme Court in April, 1996

iii. Team Member of the study "Examination of Regional Plan for Ecologically Fragile Dahanu Region and its Environmental Viability" report submitted to Hon'ble Supreme Court in October, 1996

iv. Team Member of the study "Examination of Environmental Viability and Sustainability of Goshri Island Project, Kocho, Kerala" report submitted to Hon'ble Supreme Court in December, 1996

v. Team Member of the study "Examination of Environmental Viability and Sustainability of Thermal Power Plant of Cogentrix near Mangalore, Karnataka" report submitted to Hon'ble Supreme Court in December, 1996

vi. Team Member of the study "Examination of Environmental Viability and Sustainibility of Bandra-Kurla Complex, Mumbai, Maharashtra", report submitted to Hon'ble Supreme Court in December, 1996

vii. Project Leader of the study "Assessing the depletion of groundwater sources and land degradation in and around Sirigaon Village, Goa and its mitigation measures" Honorable High Court, Goa Bench, 2009

viii. Project Leader of the study "Assessment of Impact of Air Pollution and Vibration due to proposed Thermal Power Plant on Jaigad Fort, Dist. Ratnagiri, Maharashtra, as per the directives Maharashtra Archaeology Department, 2010

ix. Team member of the study "Assessment of impact of sewage disposal of Nagpur City on Goshikhurd Reservoir and delineation of mitigation measures for minimization of pollution", report submitted to Honorable High Court, Nagpur Bench, Maharashtra, 2011

x. Project Leader of the study "Impact Assessment of Road Embankment Construction on Narikulam Water Tank in Kanniyakumari District, Tamil Nadu", report submitted to Hon'ble Supreme Court, 2012

xi. Project Leader of the study "Monitoring of Air, Water and Atmospheric Pollution of BPCL Kochi Refinery, Ambalamugal", report submitted to Honorable High Court, Kerala, 2013

xii. Assessment of Ground Water Contamination in and Around Mahalaxmi Organochem Industries, Bhawanigarh , a report submitted

xiii. Application of Reverse Osmosis Membrane absed water treatment systems, 2019

xiv. Investigation on "Impacts of Development Activities on Khandari Reservoir, Jabalpur" as per the directives of Hon'ble High Court of Madhya Pradesh, Jabalpur, 2021

xv. Assessment of impacts of construction activity on ecology/Eco-system of Chhatri Talao, Amravati and to suggest corrective/remedial measures as per the directives of the National Green Tribunal (NGT), Western Zone Bench, Pune, 2023

xvi. Detailed Environmental Site Assessment and Remediation of Contaminated ground water and Soil and control the further spread of the Contamination - M/s. Matharu Chemical Industries Village Aloarakh Tehsil Bhawanigarh, District Sangrur, Punjab –report to be submitted to NGT, Delhi Principal Bench, 2023

Brief description of select R&D projects – 2008 and beyond

Brief description of select R & D Projects (laboratory, bench, and pilot scale) on which actively worked is presented below:

(Bold indicates – Project Leader/Coordinator/Investigator)

Sr. No.	Title of Project	Sponsor	Date of start	Brief Summary
1.	Detailed Environmental Site Assessment and Action Plan for Remediation for M/s. Malbros International Private Limited at Village Mansoorwala, Tehsil Zira, District Ferozpur, Punjab	Punjab Pollution Control Board Patiala	August 2023	Environmental site assessment due to possible injection of wastewater to the ground by H-acid manufacturing industry and delineation of remedial measures to decontaminate groundwater
2.	Detailed Environmental Site Assessment and Remediation of Contaminated ground water and Soil and control the further spread of the Contamination - M/s. Matharu Chemical Industries Village Aloarakh Tehsil Bhawanigarh, District Sangrur, Punjab	Punjab Pollution Control Board Patiala	August 2023	• Environmental site assessment due to operation of distillery and possible groundwater contamination • Delineation of remedial measures to decontaminate groundwater
3.	Assessment of impacts of construction activity on ecology/Eco-system of Chhatri Talao, Amravati and to suggest corrective/remedial measures as per the directives of the National Green Tribunal (NGT), Western Zone Bench, Pune	The Municipal Commissioner, Municipal Corporation, Amravati	July 2023	Impact assessment due to construction activity on Chhatri Talao and delineation of corrective measures to minimize adverse ecological/ environmental impacts

Sr. No.	Title of Project	Sponsor	Date of start	Brief Summary
4.	Environmental Assessment and Mitigation Measures for Floating Solar Plant on the Reservoir at the JSPL, Angul, Odisha	Jindal Steel and Power, Angul, Odisha	June 2023	Assessment of impacts due to installation of solar panels on a reservoir
5.	**Sustaining Small-Scale Water Systems (3WSWater) – Integrating Local Knowledge and Co-Learning for Preserving Aquatic Ecosystems and Improving Quality of Life"**	**IHE Delft, Netherland.**	**March 2023**	**Preparation of climate resilient water safety plan for ensuring provision of safe water in islands**
6.	**Evaluation of Electrolytic Defluoridation (EDF) Plants (256 Nos.) installed for safe rural drinking water supply in fluoride affected areas of Jharkhand state**	**Drinking Water Supply And Sanitation Department (DWSD), Government Of Jharkhand, Ranchi**	**September 2022**	Performance evaluation of EDF plants installed based on CSIR-NEERI technology
7.	**Impact On Peak Factor, Water Quantity and Quality at Consumer Ends Due to Continuing Use of Underground Storage Sumps After Conversion of Intermittent to Continuous Water Supply**	**Ministry of Housing and Urban Affairs (CPHEEO), Government of India**	**May 2022**	**Determine and quantify benefits of continuous water supply over intermittent water supply with respect to underground sumps in urban areas**
8.	Hydro-geological study in 5km radius of the RIL-DMD site at Dahej, Bharuch District, Gujarat	Reliance Industries Limited	March 2022	Determine hydro-geological status and impacts on groundwater regime due to industries operations
9.	Sustainable Water Resources Management through Conservation and Utilization Plan for the Rivers of Gadchiroli District, Vidarbha Region, Maharashtra	District Mining Foundation, Gadchiroli	February 2022	Preparation of water balance and recommendations on locations of water conservation structures to utilize surplus water in the district
10.	Training of Assistant Advisers, Public Health Engineering Department of the Department of Drinking Water and Sanitation	Department of Drinking Water and Sanitation Ministry of Jal Shakti	February 2022	Professional training on water and sanitation related topics to staff of Jal Jeevan Mission for improved implementation of the Mission

Sr. No.	Title of Project	Sponsor	Date of start	Brief Summary
11.	Affordable IoT enabled Water Service Delivery Measurement and Monitoring Sensing System for rural development	Jal Jeevan Mission, Ministry of Jal Shakti, New Delhi	January 2022	Integrating water supply systems with IoT and evaluation of indigenous water quality sensors
12.	**Investigation on "Impacts of Development Activities on Khandari Reservoir, Jabalpur" as per the directives of Hon'ble High Court of Madhya Pradesh, Jabalpur"**	**Municipal Corporation, Jabalpur**	**July 2021**	Impacts of developmental activities in catchment area on Khandari reservoir
13.	**Laboratory and Field Scale Functionality Assessment of Water Treatment Technologies**	**Department of Drinking Water and Sanitation, Ministry of Jal Shakti, Government of India**	**September 2021**	Functionality assessment of water treatment technologies implemented fir provision of safe water in rural areas
14.	**Evaluation of Efficacy of Pristine Water Make Silver Ionization Systems for Disinfection of Drinking Water"**	**M/s. Pristine Water B-234, Okhla Industrial Area, Phase I, New Delhi 110020**	**July 2021**	Performance evaluation of silver ionization systems
15.	Technical Support for Strengthening Technical and Managerial Capacity of Laboratory Personnel Working in RWSS, Odisha	UNICEF Bhubaneshwar, Odisha	July, 2021	Capacity Building of RWS&S Laboratory Personnel for implementation of Jal Jeevan Mission
16.	**Development of Capacity on Climate Change in Water Sector in Maharashtra**	**GIZ, India**	**January, 2021**	**Develop capacity of government agencies and personnel in water sector in Maharashtra with reference to climate change and its impacts in water sector, and thus support development of policies and implementation of water schemes with a climate lens.**
17.	**Preparation of Detailed Project Report (DPR)**	**National Centre for Drinking**	**December, 2020**	• **Preparation of Detailed Project Report for**

Sr. No.	Title of Project	Sponsor	Date of start	Brief Summary
	on planning, designing and developing national level state-of-art R&D water quality laboratory at NCDWSQ, Joka, Kolkata and its allied work	**Water, Sanitation and Quality (NCDWSQ) Ministry of Jal Shakti, DDWS GOI N. DELHI**		**modular national level R&D State-of-Art Water Quality Laboratory and supervise the civil and electrical work as per the approved DPR** • **Preparation of tender documents for e-procurement system/ GeM and support in the form of advice in procurement.** • **Supervision of work of installation of modular furniture and lab instruments/ equipment and other related work of laboratory as required by NCDSWQ**
18.	Evaluation of "Self Sustained Auto Backwash Iron Removal Plant" installed for safe drinking water supply in iron affected area of Korba district, Chhattisgarh	M/s. M.A. Corporation, Post Gram Baghima, Jaspurnagar, Dist. Jashpur, Chhattisgarh	December, 2020	To suggest the suitability of Iron Removal Unit in terms of its performance in removal of excess iron from drinking water
19.	**Development of membrane / barrier system for prevention of contamination from leach pits of the twin pit toilet system**	**In house project**	**October 2020**	• **Improved twin pit toilet design to reduce microbial load from the pit to nearby water sources**
20.	Developing Prototyping and Field scale Demonstration of Continuous Electrolytic Defluoridation Technology (EDF)	In house Project	October 2020	• Online EDF process development and reduce aluminium leaching
21.	Scientific and Technical Consultancy for Environmental Damage Cost Assessment due to Ash Dyke Breach at NTPC Vindhyachal	VSTPS, Vindhyachal, Singrauli, MP	March, 2020	• Assessment report on the extent of pollution due to the ash dyke breach • Damage assessment due to the pollution
22.	Performance Evaluation of the Livinguard Filters for Safe Drinking Water Supply	M/s. Livinguard Technologies Pvt. Ltd., Mumbai	January, 2020	Optimized water treatment system and evaluation of claims made by technology developer

Sr. No.	Title of Project	Sponsor	Date of start	Brief Summary
23.	**Evaluation of Water Quality Sources for their Suitability for Drinking Purposes and Delineation of Treatment Options**	**Water Supply Departments, Educational Institutes and Other Organizations**	**November, 2019**	• **Water quality monitoring for various** • **Water Supply Department, Educational Institutes and other Organizations completed as and when received** • **WQ report provides the status of drinking water supply and suggestions / recommendations are imparted for prevention of water contamination, which help them to implement necessary measures to prevent the contamination of water**
24.	**Preparation of Water Quality Trend Report (2013-2017) under National Water Quality Monitoring Programme (NWMP)**	**CPCB, Delhi**	**August, 2019**	**Central Pollution Control Board is implementing a National Water Quality Monitoring Programme with a network of 3500 locations on aquatic resources in the country. The detailed trend analysis of the data collected at the identified 3500 locations across the country during 2013-2017 is carried out.**
25.	**Improving the Status of Water Quality Assessment in the State of Rajasthan**	**UNICEF Jaipur**	**May, 2019**	▪ **23 Nos. DFUs installed in 2 Districts of Rajasthan have been evaluated** ▪ **5 Water quality testing laboratories have been evaluated for their readiness towards NABL Accreditation.** ▪ **Conducted State Level Workshop on WQMS at Jaipur in December 2019** ▪ **Conducted ISO Auditor Training in January 2020 at Nagpur**

Sr. No.	Title of Project	Sponsor	Date of start	Brief Summary
26.	**Evaluation of Hand Pump Attachable Fluoride Removal Plant installed by various agencies for Rural Drinking Water Supply in Nuapada District of Odisha State**	**RWS&SD, Bhubaneshwar, Odisha**	**April, 2019**	• **Verification of claims of manufacturers to assist State Government to monitor performance of water treatment plants** • **Performance Evaluation of handpump attachable fluoride removal unit has been carried out after 6 months and 12 months of its installation in the field**
27.	**Evaluation of Efficacy of Drinking Water Disinfection by Ozonator**	**Creative OZ-AIR (I) Pvt. Ltd., C-228, Sector-63, Noida – 201305, UP**	**February, 2019**	**Evaluated efficiency of ozonator units for disinfection of drinking water in terms of microbial contamination in the laboratory and plants installed in the field; and suggested the suitability of ozonation method in terms of Silver / other metal ion concentrations in post-treatment water samples**
28.	**Administer and Manage UP Jal Nigam Laboratories for Chemical and Bacteriological Testing of Drinking Water Sources in all Districts [75] of Uttar Pradesh**	**The Chief Engineer (Rural), Uttar Pradesh Jal Nigam, 6, Rana Pratap Marg, Lucknow – 226001, UPradesh**	**February, 2019**	• **Administration and Management of UP Jal Nigam Laboratories for Chemical and Bacteriological Testing of Drinking Water Sources in all Districts [75] of Uttar Pradesh** • **Collection and Testing of Water Samples** • ***Water Quality mapping for the state of Uttar Pradesh*** • **Preparedness for provision of safe drinking water at urban/rural habitations** • **NEERI audited >60 labs and submitted details for improvement in the labs** • **Chemists and Microbiologists were**

Sr. No.	Title of Project	Sponsor	Date of start	Brief Summary
				appointed and posted in 61 labs of UP Jal Nigam • **Water testing and uploading of the generated water quality data on IMIS portal was carried out; more than 1,71,000 water samples have been analyzed**
29.	Ash Characterization, its leachability, hydrogeological and water quality in and around ash filled South Balanda Mine void	NTPC Ltd, Angul, Odisha	March, 2018	▪ Groundwater quality in the vicinity of the ash pond and water quality of the ash pond ▪ Hydrogeological scenario in the buffer zone and assessment of likely impact on groundwater ▪ Delineation of measures to avoid/minimize impacts due to ash disposal
30.	**Evaluation of Efficacy of SENCO Make Silver Ionization Equipment for Disinfection of Drinking Water**	**M/s. Sre Senthil Engineering Company, A-12, Coimbatore (P) Industrial Estate, Sidco, Coimbatore – 641021**	**February, 2019**	**Evaluated efficiency of silver ionization units for disinfection of drinking water in terms of microbial contamination in the laboratory and plants installed in the field; and suggested the suitability of silver ionization method in terms of Silver / other metal ion concentrations in post-treatment water samples**
31.	**Evaluation of Efficacy of Drinking Water Disinfection by Silver Ionization**	**Mr. S.S. Bhalla, Proprietor, M/s. Bhask Industries, F-358, Phase VIIIB, Industrial Area, S.A.S Nagar, Mohali**	**December, 2018**	**Evaluated efficiency of silver ionization units for disinfection of drinking water in terms of microbial contamination in the laboratory and plants installed in the field; and suggested the suitability of silver ionization method in terms of Silver / other metal ion concentrations in post-treatment water samples**

Sr. No.	Title of Project	Sponsor	Date of start	Brief Summary
32.	Investigations on Water Sources in 14 Villages of Tamnar Block of Raigarh District, Chhattisgarh	Maharashtra State Power Generation Company Limited (MSPGCL), PrakashGarh Bandra (East), Mumbai, Maharashtra	November, 2018	• Collection and evaluation of drinking / domestic water sources in 14 villages in Tamnar Block of Raigarh District, Chhattisgarh and suggest methodology for remediation of contaminated sources
33.	Evaluation of Hand pump attachable iron removal plants installed by various agencies for rural drinking water supply in Odisha State	Rural Water Supply and Sanitation, Bhubaneshwar, Odisha	March, 2018	• Performance Evaluation of handpump attachable iron removal unit has been carried out after 6 months and 12 months of its installation in the field.
34.	Evaluation of Electrolytic Defluoridation Plants based on CSIR-NEERI technology	M/s. HES/ LTek/Nagpur Chemical / SRE Senthil/ Spectrapure Hi-Tech/SKR, Raisen, MP/RM Engg. Thane, Water Life India, A.P/ Sree Sai Water Treatment, A.P Pristine Water, Delhi/ CleanFlo India Pvt. Ltd., Delhi, WasmanPro, Chennai	July 2017	• Safe potable water supply systems with fluoride concentration below 1.0 mg/L by installation of EDF plants in fluoride affected habitations in various States • CSIR-NEERI Technology was transferred to MSMEs
35.	**Local Treatment of Urban Sewage Streams for Healthy Reuse (LOTUS) This is DST project description – Predictive Tool….**	**DBT, New Delhi**	**March, 2017**	• Knowledge on occurrence, persistence and accumulation of contaminants and their health impacts to aid in design and operation of reuse schemes for Indian megacities (basis for Water Reuse Safety Plan), and

Sr. No.	Title of Project	Sponsor	Date of start	Brief Summary
				• Novel socio technological solutions to reduce both perceived and actual health risks of water reuse in a semi-closed urban water cycle.
36.	Analysis of technologies adopted in water treatment units in Bihar and adequacy of operation and maintenance cost	UNICEF State Office for Bihar	April, 2019	• Development of Tools for Performance Assessment of existing water treatment plants profiling inclusive of performance indicators, interaction with stakeholders (households, Sarpanch, Service provider). • Development of Guidance Document highlighting the institutional and policy framework
37.	**Assessment and grading of water testing laboratories of West Bengal PHED**	**UNICEF Kolkata**	**March, 2019**	• **Evaluate the resources and performances of the top five water testing laboratories** • **Strengthening of knowledge on Uniform Drinking Water Quality Monitoring** • **Recommendations on improvement of functioning of the laboratory** • **Assess preparation of NABL Accreditation process for these select laboratories**
38.	Understanding Water Safety with Focus on Membrane/Reverse Osmosis (RO) based plants and Water ATMs for Drinking Water Supply in Select Habitations	UNICEF Mumbai	February, 2019	• Development of Tools for Performance Assessment of existing RO plants including village profiling, Membrane /RO based water treatment plants profiling inclusive of performance indicators, interaction with stakeholders

Sr. No.	Title of Project	Sponsor	Date of start	Brief Summary
				Development of Guidance Document highlighting the institutional and policy framework
39.	**Training programmes on "Water Quality Monitoring and Surveillance" for officials from Maharashtra State Drinking Water Supply Department, GSDA, Zilla Parishad and related Departments**	**Water & Sanitation Support Organization (WSSO), Water Supply & Sanitation Department Government of Maharashtra**	**October, 2018**	**Training of chemists and administrative officials involved in water quality monitoring**
40.	Water Quality Monitoring of the Gosi Khurd Reservoir and Delineation of Mitigation Measures for Minimization of Pollution	Chief Engineer Gosi Khurd Project Circle, Nagpur	July, 2018	• Water Quality Monitoring of the Gosi Khurd Reservoir to ensure reservoir water quality for designated use • Delineation of Mitigation Measures for Minimization of Pollution
41.	**Development of a Strategy to roll out Water Safety Plan in Dungarpur District, Rajasthan, India**	**UNICEF, Jaipur, Rajasthan**	**March, 2018**	• **Support the district and state government to prepare, document and implement Water Safety Plan (WSP)** • **Capacity building and support towards effective replication of WSP approach in Rajasthan**
42.	Installation and Performance Evaluation of Household Water Treatment Technology for Safe Water	Save the Children, Bal Raksha Bharat, Gurgaon	April, 2018	• Evaluation of existing drinking water quality, water treatment if any and assess health status through questionnaire based or secondary data • Development, implementation of HWTS system. • Field visit and interaction with inhabitants and distribution and monitoring of 100

Sr. No.	Title of Project	Sponsor	Date of start	Brief Summary
				NEERI-ZAR House-hold water treatment units
43.	**Evaluation of Electrolytic Defluoridation Plants installed for safe drinking water supply in fluoride affected areas of Jharkhand State**	**DWSD, Ranchi Jharkhand**	**January, 2018**	**Study the performance of the Electrolytic De-Fluoridation Plants installed for drinking water supply in fluoride affected habitations**
44.	**Training cum Refresher Course for the Engineers (and Chemists) of PHE I&FC Department , J&K**	**Communication & Capacity Development Unit (CCDU), Water & Sanitation Support Organi. (WSSO) Dept. of PHE, I&FC J&K State**	**January, 2018**	**Training of Engineers and Chemists**
45.	A Detail Study to Understand the Non-Putrefying Property of River Ganga in both Water and Sediment	Ministry of Water Resources, River Development & Ganga Rejuvenation, New Delhi	October 2017	• Understand the Non-Putrefying Property of River Ganga in both Water and Sediment • Study provided inputs for decision makers in preparing framework and prioritizing activities for initiating actions for Ganga Rejuvenation
46.	**Piloting of Sanitation safety planning tool in Nagpur**	**WHO, New Delhi**	**August, 2017**	• **Apply WHO's SSP tool to carry risk and hazard analysis in a wastewater system in Nagpur** • **To identify recommendations for safe disposal / reuse of wastewater effluents** • **To protect health of communities around STP and final disposal sites, sanitation workers and other exposed groups** • **To protect water sources from contamination**

Sr. No.	Title of Project	Sponsor	Date of start	Brief Summary
47.	Impact of Magic Pits on Ground Water Quality and Quantity	MDWS, Delhi	January, 2017	Based on the disposition of the cluster of Magic Pits, the study evaluated performance of these pits in terms of microbial water contamination
48.	**Assessment of Drinking Water Quality and Delineation of Treatment Options**	**Central/State Govt. Organizations**	**April, 2017**	• **Water quality assessment of drinking water sources from Educational Institutes and Other Organizations and suggestions / recommendations for prevention of contamination of water for safe water supply to the staff and children**
49.	**State Referral Institute for Water and Sanitation Organization, Govt. of Maharashtra, Mumbai**	**WSSO, WSSD, GOM**	**January, 2017**	• **Strengthening of knowledge pertaining to environmental management including environmental monitoring with specific emphasis water and biodiversity conservations**
50.	**Predictive approach for early detection of contaminant zone in intermittent and continuous water supply systems and health impacts**	**Department of Science and Technology**	**December, 2016**	• **Optimal locations of monitoring stations considering risk of accidental contamination.** • **Risk map indicating High, Medium and Low risk pipes in the study area network for O&M of network and rehabilitation of critical pipes** • **An evidence based advocacy tool quantifying impacts of intermittent and continuous water supply** • **A user-friendly software tool for decision support and**

Sr. No.	Title of Project	Sponsor	Date of start	Brief Summary
				risk mapping will be demonstrated • **Validation of these tools shall be done through water quality monitoring in terms of presence and quantification of indicator and pathogenic bacteria**
51.	Development of mixed metal (hydro) oxide material for adsorptive removal of fluoride from groundwater at circumneutral conditions	Department of Science and Technology	December, 2016	▪ Mixed metal (hydro) oxide is developed ▪ Experiments regarding adsorptive fluoride removal capacity of materials have been conducted ▪ Column study completed
52.	Evaluation of Hand Pump Attachable Fluoride Removal Plants Installed by various agencies for Rural Drinking Water Supply in Jharkhand State	DWSD, Ranchi, Jharkhand	July, 2016	• To undertake performance evaluation of the hand pump attachable fluoride removal plants installed by various agencies for drinking water supply in fluorosis affected habitations. • Identification of appropriate technology for the community
53.	Evaluation of Technologies Developed by Various Agencies for Drinking Water Supply	Various Private Agencies	April, 2015	• To study the performance of Water Treatment Plants developed and installed by various agencies for drinking water supply. • Identification of appropriate technology for the community
54.	**Testing of Water Samples for Select Parameters**	**Government of Bhutan**	**December, 2017**	**The water samples were received from Royal Center for Disease Control, Ministry of Health, Royal Government of Bhutan and analysed for the selected water quality parameters**
55.	To ascertain dosing of High/Medium Basicity	PHED Kekri, Rajasthan	October 2017	▪ To ascertain optimized dosing of High/Medium

Sr. No.	Title of Project	Sponsor	Date of start	Brief Summary
	Poly Aluminium Chloride for Coagulation of Bisalpur Dam Raw Water at Water Treatment Plant Surajpura, Jaipur and Water Treatment Plant Kekri, Ajmer			Basicity Poly Aluminium Chloride for coagulation of Bisalpur Dam Raw Water at water treatment plant Surajpura, Jaipur and water treatment plant Kekri, Ajmer. ▪ To suggest treatment measures for improvement in water quality for water supply schemes
56.	**Water Safety Planning in government Medical College and Super Specialty Hospital in Nagpur, Maharashtra**	**WHO, New Delhi**	**July, 2016**	• **Water safety plan document for super specialty hospital in GCMH including SOPs, emergency response plans etc.** • **Guidance document for water safety planning in healthcare facilities.**
57.	Studies on Water Safety Plans in India	UNICEF, New Delhi	August, 2016	• Studies of WSPs in the States of Maharashtra and West Bengal which distinctly address microbial and chemical contamination. • A well-organized and rich laboratory network for WQM&S provides a basis for coordination of evaluation and monitoring of supplies; opportunity exists to incorporate this network into the activities of WSPs.
58.	Testing of Drinking Water Samples for Selected Parameters from Villages in Korba District of Chhattisgarh State	PHED, Korba, CG	April, 2016	• Testing of water samples for Fluoride, Iron, and important physico-chemical parameters like pH, EC, alkalinity and TDS from water quality affected habitations from Korba district in the state of Chhattisgarh

Sr. No.	Title of Project	Sponsor	Date of start	Brief Summary
				• Identification of locations where high concentrations of identified contaminants are expected but not reported. • Recommendations to deal with the fluoride, iron and important physico-chemical parameters like pH, EC, alkalinity and TDS from water quality affected habitations.
59.	**Studies on groundwater quality of Maldives Island to check feasibility for drinking purposes, guideline preparation, and staff training**	**WHO Maldives**	**December, 2015**	**Status of groundwater quality of Maldives Island to check feasibility for drinking purposes and identifying suitable measures for water treatment.**
60.	Integrated hydro-geological, geophysical, hydro-chemical and groundwater flow and solute transport modeling studies around the ash filled South Balanda mine voids in Angul District, Odisha	NTPC Talcher	May 2015	Groundwater quality in the vicinity of the ash pond and water quality of the ash pond
61.	Monitoring of groundwater, surface water and soil in the vicinity of South Balanda mine and old ash pond	NTPC Talcher	May, 2015	▪ Assessment of the groundwater, surface water and soil quality in the surrounding of the existing mine pit (ash pond) ▪ Assessment of the impact of ash pond on groundwater and surface water quality in the vicinity of the mine pit (ash pond)
62.	**Evaluation of Arsenic Contamination in Ground Waters of Chowki Block in Rajnandgaon District of Chhattisgarh**	**PHED, Rajnandgaon, Chhattisgarh**	**August, 2015**	• **Collection and evaluation of ground water samples for arsenic contamination in Chowki block of Rajnandgaon district, Chhattisgarh and**

Sr. No.	Title of Project	Sponsor	Date of start	Brief Summary
				suggest methodology for remediation of contaminated sources, if any • **Capacity building of the staff involved in water sampling and testing in the water testing laboratories**
63.	Evaluation of HRCM Bucket Filter	WFR Pune	September, 2015	Evaluation of HRCM bucket filter developed by Golden formula, St. Petersburg, Russia in collaboration with WFR, Pune, India for removal of water contaminants and bacteriological disinfection of drinking water.
64.	Evaluation of Efficiency of UNIKO-F-AOC Flocculent and Disinfection Capacity of DEZAVID for Potable Water Treatment	WFR Pune	September, 2015	To study the flocculation efficiency of UNIKO-F-AOC and disinfection efficiency of DEZAVID products
65.	**Testing of Drinking water samples for Heavy metals/Toxic metals/Pesticides/fertilizers including training programme on water quality testing**	**WSSO, Water Supply & Sanitation Dept., Govt. of Maharashtra,**	**June, 2015**	• **The testing of drinking water samples for Heavy metals, Toxic metals, Pesticides, Fertilizers etc. in the study area comprised of twelve districts** • **Capacity building of the staff involved in water sampling and testing in the water testing laboratories**
66.	**Natural Water Systems and Treatment Technologies (NaWaTech) to cope with water shortages in urbanised areas of India**	**Department of Science and Technology under 7th Framework India – EU Programme**	**January, 2013**	**Design and implementation of wastewater treatment systems, exploring replication potential, training of SMEs, establishing Community of Practice, training**
67.	**Assessment of water quality and sediment analysis to understand**	**National Mission for Clean Ganga (NMCG)**	**December, 2014**	**Identification of water quality parameters, Collection and analysis of water and sediment**

Sr. No.	Title of Project	Sponsor	Date of start	Brief Summary
	the special property of Ganga River			samples, identification of special characteristics of River Ganga
68.	Evaluation of Technologies Developed by Various Agencies for Drinking Water Quality	Rural Drinking Water and Sanitation Department of various States	April 2015	Understand water treatment processes, develop protocol for evaluation, undertake experimentation for evaluation, collection and water samples from field based water treatment plants
69.	Introduce and Implementation of Water Safety Plans (WSP) in Four Healthcare Facilities	World Health Organisation, SEARO, Delhi	August, 2014	Identification of healthcare facilities, identification of water sources, water distribution network and associated hazards, preparation of response plan
70.	Assessment of Ground Water Contamination in and Around Mahalaxmi Organochem Industries, Bhawanigarh (NGT referred project)	Punjab Pollution Control Board	January, 2015	Understanding process details, water sample collection and analysis, report preparation, presentation to National Green Tribunal
71.	Training Programmes on Water Quality Monitoring, Network Design, Sampling, Analysis and Quality Assurance	Central Pollution Control Board	January, 2015	Prepare training module and conduct training, evaluation of training
72.	Evaluation of Three Hand Pump Attachable Fluoride Removal Pilot Plants Installed by Various Agencies for Drinking Water Supply in Odisha State	Rural water Supply and Sanitation, Department, Government of Orissa	January, 2015	Field visits, water sample collection, collection of information on process detail, analysis of water samples, recommendations on improvement of plant performance
73.	Integration of Water Safety Plan and Household Water Treatment and Safe Storage in Open Defecation Free village in India	World Health Organisation, Geneva	June, 2014	Preparation of water safety plan, assess household water safety, sanitary surveillance, developing correlation among water safety, hygiene and toilet use in households

Sr. No.	Title of Project	Sponsor	Date of start	Brief Summary
74.	Technological eco-innovation for the quality control and the decontamination of polluted waters and soils (TECO)	European Commission	March, 2015	Networking of experts and dissemination of information on decontamination of polluted soils and water
75.	**Development and demonstration of grey water treatment and reuse (12th Five Year Plan Project)**	**CSIR**	**June, 2013**	**Design and implementation of greywater treatment and reuse system using vertical wall**
76.	**Demonstration of Water Safety Plan for Amravati City (12th Five Year Plan Project)**	**CSIR**	**June, 2013**	**Hazard identification from catchment to consumer, preparation of improvement plan for safeguarding water**
77.	Implementation of Integrated Fluorosis Mitigation Programme for minimizing disease burden due to Fluorosis (12th Five Year Plan Project)	CSIR	June, 2013	Conduct QCRA to identify exposure to fluoride, exposure assessment and implementation of EDF plants
78.	Assessment of impact of fluoride in ground waters, used for irrigation in India, on soil, crops and human health (12th Five Year Plan Project)	CSIR	June, 2013	Analyze fluoride in water, soil and crops, develop correlation in uptake of fluoride by these media and identify health effects in fluorosis endemic areas
79.	**Integrated hydrogeological studies in and around Jamnagar Refinery Complex, Jamnagar**	**Reliance Industries Limited**	**June, 2013**	**Estimate water availability and demand, prepare water balance and identify solutions to bring down water withdrawal, assess impacts of wastewater irrigation on ground water**
80.	Impact Assessment Studies of Fly Ash disposal into mine void quarry No. 4 of Jagannath OCP	Bhushan Steel Ltd., Odisha	July, 2014	Characterize ash and ash pond samples, groundwater modelling, report preparation
81.	Impact assessment of ash pond on Groundwater Quality in the surrounding area of South Balanda Mine Pit of Talcher Thermal Power Plant	National Thermal Power Corporation	December, 2013	Characterize ash and ash pond samples, groundwater modelling, report preparation

Sr. No.	Title of Project	Sponsor	Date of start	Brief Summary
82.	Advanced study to establish Groundwater Quality in the Vicinity of Flyash Ponds at NTPC, Simhadri	NTPC Simhadri, AP	September, 2013	Characterize ash and ash pond samples, groundwater modelling, report preparation
83.	**Testing efficiency of Household Water Purification products**	**UNICEF, Ethiopia**	**July, 2013**	**Preparation of protocol, testing efficiency of water purification products**
84.	**EIA of Gargai-Pinjar Dam project**	**Municipal Corporation of Greater Mumbai**	**April, 2012**	**Primary and secondary data collection, preparation of EIA and EMP reports, presentation in Environmental Appraisal Committee**
85.	**Evaluation of Water Filtration Plant based on LIQTECH Silicon Carbide Membranes**	**J K Tyre Limited**	**June, 2012**	**Identification of suitable sites for installation of pilot plant, finalization of design of treatment plant, erection and evaluation of water treatment plants**
86.	**Development and application of surfactants for reduction in evaporation losses from surface water reservoir**	**Ministry of Drinking Water and Sanitation, New Delhi**	**February, 2013**	**Synthesis of organic material, collection of micro-meteorological data, experimentation on estimation of reduction of evaporation loss**
87.	**Water Quality Management Plan for the Tehri Dam Reservoir**	**Tehri Hydroelectric Development Corporation**	**March, 2013**	**Collection and analysis of water samples, determine changes in water quality due to water impoundage, report preparation**
88.	**EIA Study for Pilot CPV Project, Walwhan near Lonawala, Maharashtra**	**Tata Power Limited**	**January, 2013**	**Collecting of water samples and analysis, mathematical modelling to estimate increase in water temperature, report preparation**
89.	**Training programmes for chemists and engineers from rural water supply agencies**	**Ministry of Drinking Water and Sanitation, New Delhi**	**April, 2012**	**Prepare training module and conduct training, evaluation of training**
90.	**Preparation of Water Security Plan for Villages in Rajnandgaon district in Chhattisgarh state**	**UNICEF, Raipur**	**September, 2012**	**Preparation of water budget, identification of measures to enhance water availability, sanitary surveillance, water safety plan preparation**

Sr. No.	Title of Project	Sponsor	Date of start	Brief Summary
91.	Hydrogeological studies and delineation of mitigation measures for proposed ash pond of Thermal Power Plant, Birsinghpur, Umaria district	Madhya Pradesh Power Generation Corporation Limited	August, 2011	Characterize ash and ash pond samples, groundwater modelling, report preparation
92.	Hydrogeological studies and delineation of mitigation measures for proposed ash pond of Thermal Power Plant, Sarni, Betul District	Madhya Pradesh Power Generation Corporation Limited	October, 2011	Characterize ash and ash pond samples, groundwater modelling, report preparation
93.	Groundwater Quality assessment in the vicinity of fly ash ponds and adjoining villages of NTPC, Simhadri	National Thermal Power Corporation	February, 2011	Characterize ash and ash pond samples, groundwater modelling, report preparation
94.	Design and Development of Sustainable Remediation Process for Mitigation of Arsenic Contamination in Ground Water	Rajiv Gandhi S&T Commission, Government of Maharashtra	March, 2007	Design of arsenic removal unit, lab scale studies, improvement in design, fabrication of field based units and evaluation, report preparation
95.	**Assess the Impacts of Climate Change on Water Demand at National Level for the Short, Medium, to Long-Term Time Line**	**Ministry of Environment & Forests, NATCOM, New Delhi**	**April, 2008**	**Collection of secondary data on water demand in various agro-climatic regions, assess impacts on climate change in water demand in long and short term**
96.	**Artificial Recharge to Ground Water by Treated Waste Water through Soil Aquifer Treatment (SAT) System**	**Ministry of Water Resources**	**November, 2011**	**Secondary data collection, analysis of treated wastewater in 3 cities, public survey in assessing acceptability of use treated wastewater for groundwater recharge,**
97.	**Training programmes for water supply engineers and chemists**	**Ministry of Drinking Water and Sanitation, New Delhi**	**March, 2011**	**Prepare training module and conduct training, evaluation of training**
98.	**Evaluation of lake water quality of Nagpur with respect to organics and methane emission**	**In-house project**	**July, 2008**	**Monitoring lake water quality and methane emissions, determination of methane emission factors and estimating emissions from entire lake, report preparation**

Sr. No.	Title of Project	Sponsor	Date of start	Brief Summary
99.	Preparation of regional environmental management plan based on carrying capacity study for Sambalpur-Jharsuguda	Orissa State Pollution Control Board	August, 2009	Water quality monitoring, water budgeting, preparation regional water environment plan
100.	**Short term and long term suggestions of the potability of water at Gwalior**	**Gwalior Municipal Corporation**	**March, 2012**	**Analysis of water at reservoir (source), treatment plant, distribution system, consumer points, recommendation to avoid colour in water by enhancing oxidation at treatment plant**
101.	**Updating the existing Technology Manual on drinking water treatment technologies**	**Ministry of Drinking Water and Sanitation, New Delhi9.94**	**June, 2011**	**Identify appropriate water treatment technologies and prepare manual based on applicability in India**
102.	Assessment of impact of sewage disposal of Nagpur City on Goshikhurd Reservoir and delineation of mitigation measures for minimization of pollution	Water Resources Department, Government of Maharashtra	January, 2011	Water quality monitoring in rivers and Goshikhurd reservoir, identification of wastewater sources
103.	Evaluation and Standardization of Arsenic Removal Units	UNICEF, West Bengal	May, 2010	Field visits, water sample collection, collection of information on process detail, analysis of water samples, recommendations on improvement of plant performance
104.	**Greywater Treatment and Reuse in the Residential Complex of Accountant General's Office , Raipur, Chhattisgarh**	**Central Public Works Department, Raipur**	**July, 2010**	**Collection of data related to generation of greywater treatment system, design of treatment system**
105.	**Interventions to Improve Water and Environmental Sanitation Status in Madhya Pradesh**	**UNICEF, Madhya Pradesh**	**January, 2010**	**Identifying gaps in skill availability, design and demonstration of interventions related to water and sanitation, training of PHED**
106.	**Design and Development of Sustainable Remediation Process**	**Rajiv Gandhi S&T Commission,**	**July, 2009**	**Laboratory based Chemo-DF design, identification of sites for Chemo-DF**

Sr. No.	Title of Project	Sponsor	Date of start	Brief Summary
	for Mitigation of Fluoride Contamination in Groundwater and Field Application for Domestic Use	Government of Maharashtra		units installation and monitoring
107.	Environmental friendly strategy for waste management in India: Utilising cement and concrete production technology	Research Council of Norway	November, 2009	Preparation of database for coal-ash generation and utilization, laboratory experiments for increasing content of ash in concrete making and optimization studies
108.	Design, development and field testing of solar energy based electrolytic defluoridation unit for portable water supply	Ministry of Drinking Water and Sanitation, New Delhi	June, 2009	Laboratory based EDF design, identification of sites for EDF plant, installation and monitoring of EDF plants
109.	Environmental Management Plan (EMP) between Katra-Qazigund (Km 30-168) Section of Udhampur-Srinagar-Baramula Rail Link (USBRL) Project in the State of Jammu & Kashmir	Konkan Railway Corporation Limited	June, 2008	Air quality monitoring and report preparation
110.	Monitoring of Air, Water and Atmospheric Pollution of BPCL Kochi Refinery, Ambalamugal in connection with Kerala High Court Judgement	Kochi Refinery Limited	August, 2010	Water quality monitoring around Kochi refinery and report preparation
111.	Development of school based electrolytic defluoridation unit	UNICEF, Madhya Pradesh	September, 2010	Design of school based EDF plants, laboratory based optimization study, installation and monitoring of units
112.	Arsenic monitoring in Madhya Pradesh	UNICEF, Madhya Pradesh	September, 2010	Identification of drinking water sources, collection of water samples and analysis for presence of water samples
113.	Preparation of village water safety and security plan	UNICEF, Madhya Pradesh	September, 2010	Preparation of water budget, identification of measures to enhance water availability, sanitary

Sr. No.	Title of Project	Sponsor	Date of start	Brief Summary
				surveillance, water safety plan preparation
114.	Setting-up of Electrolytic Defluoridation Plants at 16 locations in 9 districts of Madhya Pradesh	UNICEF, Madhya Pradesh	September, 2010	Design of EDF plants, conduct QCRA in select villages, installation of EDF plats
115.	Impact Assessment of Road Embankment Construction on Narikulam Water Tank in Kanniyakumari District, Tamil Nadu	National Highway Authority of India	November, 2010	Assess impacts of obliteration and bifurcation of Narikulam tank on saline water intrusion ground water depletion Loss of existing aquifers
116.	Implementation of Water Safety Plan (WSP) in Nagpur City, Maharashtra, India	World Health Organisation, SEARO, Delhi	April, 2011	Identification of hazards from catchment to consumer, prioritization of hazards and preparation of risk mitigation plan
117.	Recycle and reuse of greywater in NEERI Campus	In-house project	April, 2010	Design and implementation of greywater treatment and reuse system, monitor quality and quantity of greywater
118.	Literature Search for Rapid Assessment of Drinking Water Quality	World Health Organisation, Geneva	March, 2010	Data mining on microbiological contamination of drinking water quality
119.	Strategic Environmental Assessment for Sustainable City Planning for Pune	Ramboll Natura, Sweden	June, 2009	Assess environmental impacts of city plan, modify planning document to minimize environmental impacts, public consultation and report preparation
120.	Quantitative Microbial Risk Assessment for open-defecation free and non-open defecation free villages to evaluate Total Sanitation Campaign	UNICEF, Madhya Pradesh	October, 2005	Analyse water samples in open defecation free and open defecation villages, identify hazards in both the settings
121.	Greywater reuse in residential tribal schools and individual households	UNICEF, Madhya Pradesh	October, 2005	Design and implementation of greywater treatment and reuse system, develop

Sr. No.	Title of Project	Sponsor	Date of start	Brief Summary
				water safety plan for the system
122.	Development of health based targets for fluoride in drinking based on Quantitative Chemical Risk Assessment	UNICEF, Madhya Pradesh	October, 2005	Design field based studies, analyse fluoride in drinking water and food, hazard identification, develop health based targets
123.	Multi-district Assessment of water safety	UNICEF, Madhya Pradesh	October, 2005	Design of water quality monitoring, training of PHED chemists, water quality monitoring, Water Quality Atlas preparation
124.	System strengthening of MP PHED to implement Total Sanitation Campaign and Swajaldhara programmes	UNICEF, Madhya Pradesh	October, 2005	Identifying gaps in skill availability, design and demonstration of interventions related to water and sanitation, training of PHED

Brief description of select R&D projects – 1989 till October 2005 (I joined UNICEF in October 2005)

S.No	Title of project	Sponsor	Start date	My role in the study
125.	**EIA for expansion of Mumbai port**	**Mumbai Port Trust**	**October 2005**	**Air quality and noise monitoring and modelling, report preparation and defence in public, SPCB, hearing and MoEF**
126.	**Landuse planning for Alumina refinery and Karlapat Bauxite deposit**	**-**	**August, 2004**	**Collection of data on landuse and analysis, report preparation**
127.	**Environmental Impact Assessment for Hydrocarbon Development in RJ-ON-90/1 Block in Barmer and Jalore District Rajasthan. (CEIPC)**	**Cairn Energy India Limited**	**June, 2004**	**Air quality and noise monitoring and modelling, report preparation and defence in public, SPCB, hearing and MoEF**
128.	**EIA for proposed development of Mumbai SEZ, Navi Mumbai**	**Positara Port Private Limited**	**September, 2004**	**Air quality and noise monitoring and modelling, report preparation and defence in public, SPCB, hearing and MoEF**
129.	**EIA for refinery expansion at Motikhavdi, Gujarat**	**Reliance Industries Limited**	**July, 2004**	**Air quality and noise monitoring and modelling, report preparation and defence in public, SPCB, hearing and MoEF**
130.	EIA for combined cycle power plant at Uran	Mahagenco	April, 2004	Air quality modelling
131.	**EIA for expansion plans at petrochemical complex, Hazira**	**Reliance Industries Limited**	**March, 2004**	**Air quality and noise monitoring and modelling, report preparation and defence in public, SPCB, hearing and MoEF**
132.	Environmental Impact Assessment for Proposed Exploration of Coal	Oil and Natural Gas Corporation Limited	December 2002-	Data collection and analysis

S.No	Title of project	Sponsor	Start date	My role in the study
	Bed Methane in North Karanpura (NK-CBM-2001/1) in Jharkhand (February 2003)			
133.	**Environmental, Social, Health, Risk Assessment & Management Plan for Hazira-Mora gas pipeline**	**Shell India Limited**	**December, 2002**	**Air quality and noise monitoring, data collection, report preparation, defence in public hearing and SPCBs**
134.	**Initial Environmental Examination of Bodhghat Hydel Project**	**Chhattisagarh State Electricity Board, CSEB**	**April 2002**	**Data analysis and report preparation**
135.	EIA for expansion of thermal power plant, Paras	Mahagenco	September, 2002	Air quality and noise monitoring
136.	EIA for expansion of spun pipe manufacturing unit at Rachnagunneri, Andhra Pradesh	Electrosteel Castings Limited	June, 2002	Air quality and noise monitoring and modelling, report preparation and defense in public hearing and MoEF
137.	**EIA for non-LNG Cargo Port at Hazira, Gujarat**	**Hazira LNG and Port Private Limited**	**October, 2002**	**Air quality and noise monitoring, data collection, air quality and noise modelling, report preparation, defence in public hearing and MOEF**
138.	**EIA of Balason hydroelectric project, West Bengal**	**Electrosteel Castings Limited**	**November, 2002**	**Preparation of environmental management plans and report preparation**
139.	Environmental Impact Assessment for Mining Operations in Bellary-Hospet Region, Karnataka	Bellary-Hospet Mining Limited	April 2002 –	Analysis of ambient air quality data
140.	**Preparation of six sector specific EIA Guidance Manuals**	**Ministry of Environment and Forests**	**October, 2002**	**Drafting of EIA Guidance Manual for six sectors namely thermal power plants, hydroelectric projects,**

S.No	Title of project	Sponsor	Start date	My role in the study
				pesticides, pharmaceuticals, ports and harbors and petrochemicals
141.	**Preparation of National EIA Guidance Manual**	**Ministry of Environment and Forests**	**October, 2002**	**Drafting of guidance manual based on revised Environmental Clearance Process, presentation to stakeholders and finalization of guidance manual**
142.	**Environmental Impact Assessment for Proposed Ropeway Project in Matheran, Maharashtra**	**Matheran Ropeway Ltd**	**September 2001**	**Assessment of impacts on various environmental components, report preparation**
143.	Environmental Impact Assessment for the Proposed Transportation Corridor and other Related Facilities between ESSAR Plant Site and Hazira Port, Gujarat	Essar Limited	2001	Data analysis, and report preparation
144.	Environmental Impact Assessment for Gas Grid in Gujarat	Gujarat	2001	Data analysis, and report preparation
145.	Evaluation of Environmental Impact Units by carrying out comprehensive Monitoring around Proposed Nuclear Power Project Site of Nuclear Power Corporation Limited at Kudankulum, Tamilnadu	Nuclear Power Corporation Limited	2001	Data analysis, and report preparation

S.No	Title of project	Sponsor	Start date	My role in the study
146.	Environmental Impact Assessment for the Proposed Tatipaka Mini Refinery Project of ONGC Limited at Tatipaka, Andhra Pradesh	Oil and Natural gas Corporation Limited	2001	Data analysis, and report preparation
147.	Regional Environmental Impact Assessment for Bellary-Hospet Mining Areas in Karnataka	Department of Mining, Government of Karnataka	2001	Air quality monitoring, vibration analysis, impact assessment of operations of mines on ambient air quality
148.	**Environmental Impact and Risk Assessment for Petroleum Products Pipeline of Gas Transportation and Infrastructure Limited from Jamnagar to Bhopal**	**Reliance Industries Limited**	**2001**	**Air quality and noise monitoring, data collection, report preparation, defence in public hearing and SPCBs**
149.	**Environmental Impact and Risk Assessment for Petroleum Products Pipeline of Gas Transportation and Infrastructure Limited from Goa to Hyderabad**	**Reliance Industries Limited**	**2001**	**Air quality and noise monitoring, data collection, report preparation, defence in public hearing and SPCBs**
150.	Environmental Impact Assessment of Proposed Expansion of Thermal Power Station of Maharashtra State Electricity Board at Paras, Maharashtra	Mahagenco	2001	Data analysis, and report preparation
151.	**Environmental Impact and Risk Assessment for**	**Reliance Industries Limited**	**2001**	**Air quality modelling, report preparation, defence in public**

S.No	Title of project	Sponsor	Start date	My role in the study
	Expansion of Marine Tank Farm at Motikhavdi, Gujarat			**hearing, SPCB and MOEF**
152.	**Environmental Audit for the year 2001 for Existing Refinery Complex of Reliance Petroleum Limited at Motikhavdi, Gujarat**	**Reliance Industries Limited**	**2001**	**Data collection and analysis, preparation of report**
153.	**Post – project Environmental Assessment for Existing Refinery Complex of Reliance Petroleum Limited at Motikhavdi, Gujarat**	**Reliance Industries Limited**	**2001**	**Air quality and noise monitoring, data collection, air quality and noise modelling, report preparation**
154.	**Environmental Audit for the year 2000 for Existing Refinery Complex of Reliance Petroleum Limited at Motikhavdi, Gujarat**	**Reliance Industries Limited**	**2001**	**Data collection and analysis, preparation of report**
155.	**Ambient Air Quality Study around Jamnagar Refinery Complex for Assessing the Odour Problem**	**Reliance Industries Limited**	**2001**	**Ambient Air Quality monitoring**
156.	**Design of Hazardous Waste Disposal Site at Refinery Complex of Reliance Petroleum Limited, Motikhavdi, Gujarat**	**Reliance Industries Limited**	**2000**	**Data collection and design of hazardous waste disposal facilities**

S.No	Title of project	Sponsor	Start date	My role in the study
157.	Environmental Impact Assessment for Proposed Ship-Breaking Yard at Pipavav Port, Gujarat	Pipavav Port Limited	2000	Ambient air quality monitoring and data analysis
158.	Environmental Impact Assessment for Proposed 8 MMTPA Expansion of Cauvery Basin Refinery (South India Refinery Project), Nagapattinam, Tamil Nadu	Indian Oil Corporation Limited	2000	Air quality and noise monitoring, data collection, air quality and noise modelling, report preparation, defence in public hearing, SPCB and MOEF
159.	**Carrying Capacity based Study for Implementing Master Tourism Plan on the Andaman Islands Sponsored by UNDP**	**United Nations Development Programme**	**2000**	**Data collection, determination of assimilative and supportive capacity, presentation to Lieutenant Governor, A&N Administration**
160.	**Environmental Impact Assessment for the Refinery Residue based 2x250 MW Power Project of IOCL at Savli in Vadodara, Gujarat**	**Indian Oil Corporation Limited**	**2000**	**Air quality and noise monitoring, data collection, air quality and noise modelling, report preparation, defence in public hearing, SPCB and MOEF**
161.	**Environmental Impact Assessment of Parbati Hydroelectric Project Stage-I (750 MW) of NHPC Limited in District Kullu, Himachal Pradesh**	**National Hydroelectric Power Corporation**	**2000**	**Primary and secondary data collection, preparation of preliminary environmental assessment, presentation to Environmental Appraisal Committee**
162.	**Environmental Impact Assessment of Parbati Hydroelectric**	**National Hydroelectric Power Corporation**	**2000**	**Primary and secondary data collection, preparation of EIA and EMP reports, presentation in public**

S.No	Title of project	Sponsor	Start date	My role in the study
	Project Stage-III (501 MW) of NHPC Limited in District Kullu, Himachal Pradesh			**hearing, SPCB and Environmental Appraisal Committee**
163.	**Environmental Impact Assessment for Proposed Port and LNG Import Terminal at Hazira, Gujarat**	**Shell India Private Limited**	**2000**	**Air quality and noise monitoring, data collection, air quality and noise modelling, report preparation, defence in public hearing, SPCB and MOEF**
164.	**Environmental Impact Assessment for Proposed Expansion Plans at Cast Iron Pipe Manufacturing Unit at Elavur, Tamilnadu**	**Electrosteel Castings Limited**	**2000**	**Air quality and noise monitoring, data collection, air quality and noise modelling, report preparation, defence in public hearing and MOEF**
165.	**Environmental Impact Assessment for Proposed Developments in Special Economic Zone at Positra, Gutajat**	**Gujarat Positra Port and Infrastructure Limited**	**2000**	**Air quality and noise monitoring, data collection, air quality and noise modelling, report preparation, defence in public hearing, SPCB and MOEF**
166.	**Environmental Impact Assessment for the Proposed R-LNG Pipeline from Pipavav to Hazira Region**	**British Gas India Limited**	**1999**	**Collection and collation of data along right-of-way, report preparation and defence in public hearing and SPCBs**
167.	**Rapid Environmental Impact Assessment of Proposed Ductile Iron Pipe Plant at Hatkanangale, Dist. Kolhapur**	**Electrosteel Castings Limited**	**1999**	**Air quality modelling, report preparation**
168.	**Environmental Impact**	**Rashtriya Chemicals and**	**1999**	**Air quality and noise monitoring, data**

S.No	Title of project	Sponsor	Start date	My role in the study
	Assessment of the Proposed Expansion of Methylamine and DMF Projects of RCF, Thal, Maharashtra	**Fertilizers Limited**		**collection, air quality and noise modelling, report preparation, defence in public hearing and MOEF**
169.	Environmental Impact Assessment (REIA) for the Proposed Refinery Expansion Project at Panipat, Haryana	Indian Oil Corporation Limited	1999	Ambient air quality monitoring
170.	**Environmental Impact Assessment for the Proposed Thermal Power Plant, Ammulavoyal, Tamil Nadu**	**Madras Refineries Limited**	**1999**	**Air quality and noise monitoring, data collection, air quality and noise modelling, report preparation, defence in public hearing and MOEF**
171.	Revalidation of Environmental Impact Assessment for the Modified Crude Oil Pipeline in Vadinar Region, Gujarat	Bharat Oman Refinery Limited	1999	Collection and collation of data along right-of-way, report preparation
172.	Environmental Impact Assessment for Crude Oil Handling Facilities on Shiyalbet Island near Pipavav Port	**Gujarat Positra Port and Infrastructure Limited**	1999	Data analysis
173.	**Environmental Impact and Risk Assessment for Lignite Mines at Jayamkondam, Tamilnadu**	**Jayamkondam Lignite Power Corporation Limited**	**1999**	**Air quality and noise monitoring, data collection, air quality and noise modelling, report preparation, defence in public hearing and MOEF**
174.	**Environmental Impact and Risk Assessment for Power Plant at**	**Jayamkondam Lignite Power Corporation Limited**	**1999**	**Air quality and noise monitoring, data collection, air quality and noise modelling, report preparation,**

S.No	Title of project	Sponsor	Start date	My role in the study
	Jayamkondam, Tamilnadu			**defence in public hearing and MOEF**
175.	Environmental Impact Assessment for the proposed Expansion of Bromine Plant at Khavda near Rann of Kutchchh, Gujarat	Ballarpur Industries Limited	1999	Air quality modelling
176.	Environmental Appraisal of Regasified LNG Pipeline from Pipavav to Hazira Region	Gujarat Petronet Corporation Limited	1998	Data analysis and report preparation
177.	**Environmental Impact Assessment of Proposed Expansion of Fertilizer Plant, Hazira, Gujarat**	**KRIBHCO**	**1998**	**Air quality and noise monitoring, data collection, air quality and noise modelling, report preparation, defence in public hearing and MOEF**
178.	Comprehensive EIA of Proposed Fertilizer Plant of, Gorakhpur, Uttar Pradesh	KRIBHCO	1998	Air quality and noise monitoring, data collection, air quality and noise modelling, report preparation, defence in public hearing and MOEF
179.	Evaluation of Environmental Management Plan for the Upgradation of Hazira-Bijaipur-Jagdishpur (HBJ) Gas Pipeline	Gas Authority of India Limited	1998	Collection and collation of data along right-of-way, report preparation
180.	Assessment of Pollution Load for Processing 27 MMTPA of Crude in Refinery Complex at Jamnagar, Gujarat	Reliance Industries Limited	1998	Estimating emissions to air, water and land based on the refining process data
181.	Environmental Impact Assessment for the Proposed Expansion of	NTPC Limited	1998	Data collection and analysis with reference to air and noise environment

S.No	Title of project	Sponsor	Start date	My role in the study
	Thermal Power Plant, Jhanore, Gujarat			
182.	**Environmental Impact Assessment for the Proposed LNG Import Terminal at Pipavav, Gujarat**	**British Gas India Limited**	**1998**	**Air quality and noise monitoring, data collection, air quality and noise modelling, report preparation, defence in public hearing and MOEF**
183.	Environmental Impact Assessment for the Proposed Expansion of Captive Power Plant in Petrochemical Complex at Dahej, Gujarat	Indian Petrochemicals Limited	1998	Air quality and noise monitoring, data collection, air quality and noise modelling, report preparation, defence in public hearing and MOEF
184.	Preliminary Environmental Assessment of Mines, Railway Route and Ports at Keonjhar-Paradip, Orissa	Rio Tinto – OMC Joint Venture	1997	Analysis of micro-meteorological data, cyclonic data to identify and assess feasibility of having projects in the region
185.	Calibration and Validation of Mathematical Models for EIA at Select Industries	Ministry of Environment and Forests	1997	Air and noise monitoring, stack monitoring, secondary data collection and analysis, minisonde/Monostatic Sodar data collection, determination of dispersion coefficients and calibration of mathematical models
186.	**Environmental Impact Assessment of Proposed Expansion of Fertilizer Project, Thal, Maharashtra**	**Rashtriya Chemicals and Fertilizers Limited**	**1997**	**Air quality and noise monitoring, data collection, air quality and noise modelling, report preparation, defence in public hearing and MOEF**
187.	Environmental Impact Assessment of Thermal Power	Siel Limited	1997	Data collection and analysis

S.No	Title of project	Sponsor	Start date	My role in the study
	Plant, Rajpura, Punjab			
188.	Environmental Impact Assessment of Proposed Integrated Steel Plant at Gopalpur, Orissa	TISCO Limited	1997	Air quality and noise monitoring, data collection, air quality and noise modelling, report preparation, defence in public hearing and MOEF
189.	Environmental Impact Assessment of Chlor-alkali Complex, Rajpura, Punjab	Siel Limited	1997	Data analysis
190.	Environmental Impact Assessment of Pipalpanka Dam Project, Orissa	TISCO Limited	1997	Primary and secondary data collection, preparation of EIA and EMP reports, presentation in public hearing, SPCB and Environmental Appraisal Committee
191.	Environmental Impact Assessment of Breakwater Construction at Agathi Island, Lakshadweep	Andaman Lakshadweep Harbour Works	1997	Data analysis and report preparation
192.	Environmental Impact Assessment of Breakwater Construction of at Kawaratti Island, Lakshadweep	Andaman Lakshadweep Harbour Works	1997	Data analysis and report preparation
193.	Carrying Capacity based Developmental Planning for Damodar River Basin	Ministry of Environment and Forests	1997	Ambient air quality monitoring, preparation of emission inventory, air quality modelling, determination of assimilative capacity of airshed, preparation of regional air environment management plan

S.No	Title of project	Sponsor	Start date	My role in the study
194.	Regional Environmental Impact Assessment for Jamshedpur Region	TISCO Limited	1997	Ambient air quality monitoring, preparation of emission inventory, air quality modelling, determination of assimilative capacity of airshed, preparation of regional air environment management plan
195.	Examination of Environmental Viability and Sustainability of Select Projects	As per directives of Honorable Supreme Court	1996	Data analysis, and report preparation
196.	Examination of Regional Plan for Ecologically Fragile Dahanu Region and its Environmental Viability	As per directives of Honorable Supreme Court	1996	Data analysis, Stack monitoring, assimilative capacity estimation
197.	Inspection Report on Mines, Stone Crushers and Pulverisers in Surajkund and Badkal Lake Areas in Haryana	As per directives of Honorable Supreme Court	1996	Air quality monitoring, vibration analysis, impact assessment of operations of mines, stone crushers and pulverisers on ambient air quality
198.	Environmental Impact Assessment of Pipalpanka Dam Project	TISCO Limited	1996	Climatic change forecast, Rainfall data analysis
199.	Calibration and Validation of Mathematical Models for EIA at Select Industries	Ministry of Environment and Forests	1995	Air quality and noise monitoring, data collection, Monostatic SODAR studies, calibration and validation of air quality and noise models
200.	**Environmental Impact Assessment of Proposed Expansion Project, Thal**	**Rashtriya Chemicals and Fertilizers Limited**	**1995**	**Project Co-ordination, facilitation of environmental data collection and analysis, identification, prediction and evaluation of impacts,**

S.No	Title of project	Sponsor	Start date	My role in the study
				delineation of EMP and report preparation, air quality modelling
201.	**Environmental Impact Assessment of Proposed Integrated Steel Plant at Gopalpur**	**TISCO Limited**	**1995**	**Baseline data collection on air environment, Monostatic SODAR studies, sulphur balance, fugitive emission estimation, air quality modelling**
202.	Environmental Impact Assessment of Thermal Power Plant, Rajpura	Siel Limited	1995	Studies related to air environment
203.	Environmental Impact Assessment of Chlor-alkali Complex, Rajpura	Siel Limited	1995	Studies related to air environment
204.	Environmental Impact Assessment for the Proposed Thermal Power Plant, Patalganga	Reliance Industries Limited	1995	Air quality modelling
205.	Environmental Impact Assessment for Palm Oil Extraction Plant in Little Andaman	Andaman and Lakshdweep Administration	1995	Study related to air and noise environment
206.	Environmental Impact Assessment for Jojobera Thermal Power Plant	TISCO Limited	1995	Study related to air environment
207.	Environmental Impact Assessment for 35 MW Solar Thermal Power Plant, Mathania	Rajasthan State Electricity Board	1995	Air quality modelling and delineation of EMP
208.	EIA of proposed Breakwater construction at Minicoy in Lakshadweep	Andaman Lakshadweep Harbour Works	1995	Air environment studies
209.	EIA of proposed Breakwater construction at	Andaman Lakshadweep Harbour Works	1995	Air environment studies

S.No	Title of project	Sponsor	Start date	My role in the study
	Kavaratti in Lakshadweep			
210.	Rapid Environmental Impact Assessment of Proposed Breakwater Construction Project at Minicoy Island	Andaman Lakshadweep Harbour Works	1994	Report preparation on air environment
211.	Environmental Impact Assessment of Stone Quarrying Operations at Little Andaman and Construction of Rubble Mound Breakwater at Car Nicobar Island	Andaman Lakshadweep Harbour Works	1994	Report preparation on air environment
212.	Environmental Audit, Visakh Refinery, Vishakhapatnam	Hindustan Petroleum Corporation Limited	1994	Work related to air environment
213.	EIA of proposed Hazardous Waste Disposal Site, Mannelure	Tamil Nadu Pollution Control Board	1994	Collection of baseline data on air environment and prediction of impacts, preparation of EMP
214.	Environmental Impact Assessment of Visakh Refinery-Expansion Project, Visakhapatnam	Hindustan Petroleum Corporation Limited	1994	SODAR studies, optimisation of stack parameters, air quality modelling, preparation of EMP
215.	Regional Environmental Impact Assessment for Jamshedpur Region	TISCO Limited	1993	Study related to air environment
216.	**EIA of Proposed Refinery Complex at Motikhavadi, Jamnagar**	**Reliance Industries Limited**	**1993**	**Data collection on air environment, Optimisation of stack parameters and fuel distribution, prediction of impacts. EMP preparation**

S.No	Title of project	Sponsor	Start date	My role in the study
217.	**EIA of Thermal Power Plant at Motikhavdi, Jamnagar**	**Reliance Industries Limited**	**1993**	**Air quality modelling, Technology review, EMP preparation**
218.	**Initial Environmental Examination of the Refinery Complex, at Motikhavadi, Jamnagar**	**Reliance Industries Limited**	**1993**	**Work related to air environment, report preparation**
219.	Environmental Management Plan for Aluminium Complex, Korba Based on CEIA	BALCO Limited	1993	Collection of baseline data on ambient air quality, fugitive emission monitoring, prediction and evaluation of impacts and preparation of EMP
220.	EMP for Construction Impacts of Aerated Lagoons and Marine Outfalls at Mumbai	Municipal Corporation of Greater Mumbai	1993	Air quality and noise monitoring, noise level predictions and safe blast design and prediction of peak particle velocity
221.	Environmental Impact Assessment of Visakh Refinery, Visakhapatnam	Hindustan Petroleum Corporation Limited	1990	Ambient air quality monitoring and modelling
222.	Environmental Audit of Aluminium Complex, Korba	Bharat Aluminium Company Limited	1993	Data collection regarding air environment
223.	Environmental Impact Assessment of Integrated MRPL/HPCL Complex, Manglore	Mangalore Refinery Private Limited	1993	Report preparation on air environment
224.	Environmental Impact Assessment of Middle Vaitarna Dam Project	Municipal Corporation of Greater Mumbai	1992	Collection and monitoring of climate and weather, prediction of change in climate and weather condition due to impoundment
225.	Environmental Impact Assessment for Expansion of	Hindustan Organics Corporation Limited	1992	Baseline data collection of air and noise environment, air and noise modelling, delineation of EMP

S.No	Title of project	Sponsor	Start date	My role in the study
	HOCL Complex, Kochi			
226.	Environmental Impact Assessment of 1200 MW Teesta Hydroelectric Project, Sikkim	National Hydroelectric Power Corporation	1992	Forecast of change in climatic conditions due to impoundment
227.	Rapid EIA of Middle Vaitarna Dam project, Bombay	Municipal Corporation. of Greater Bombay	1991	Climate and weather studies, data analysis and report preparation
228.	Environmental Impact Assessment of RPG Petrochemical Complex, Madras	RPG Petrochemicals Limited,Madras	1991	Ambient air quality monitoring Data analysis
229.	Environmental Management Plan for Bauxite Mining Project based on REIA, Mainpat (M.P)	BALCO Limited	1991	Noise and vibration monitoring Air quality modelling, prediction of noise levels and design of blasting operations and formulation of strategies for EMP
230.	Comprehensive Environmental Impact Assessment of Sandur Manganese and Iron Ore Mines, Sandur	Sandur Manganese and Iron Ore Limited	1991	Noise and vibration monitoring prediction of noise levels and design of blasting operations
231.	**Rapid Environmental Impact Assessment of fuel storage facilities, Nagapattinam**	**IBP Company Limited**	**1992**	**Project Co-ordination, facilitation of environmental data collection and analysis, identification, prediction and evaluation of impacts, delineation of EMP and report preparation,**
232.	Rapid Environmental Impact Assessment of Narora Nuclear Plant, Narora	Nuclear Power Corporation Limited	1992	Baseline air quality data collection and analysis

S.No	Title of project	Sponsor	Start date	My role in the study
233.	**Environmental Impact Assessment of Chemical Complex, Manglore**	**BASF India Limited**	**1992**	**Baseline data collection on air quality, air quality modelling, noise modelling and delineation of EMP**
234.	Rapid Environmental Impact Assessment of Paradeep Phosphates Limited	Paradeep Phosphates Limited, New Delhi	1990	Noise vibration studies, report preparation
235.	Rapid Environmental Impact Assessment of Vijaipur Fertilizer Plant – Expansion Project, Vijaipur	National Fertilizer Limited	1991	Baseline data collection of air environment, air quality modelling and EMP delineation
236.	Rapid EIA of Stone Quarry Operations at Rangat Bay, Middle Andaman	Andaman Lakshadweep Harbour Works, Port Blair	1990	Baseline data collection of air and noise environment
237.	Environmental Impact Assessment of Aromatics/PTA Plant, Madras	National Aromatics and Petrochemicals Corp. LTd., Madras	1989	Data analysis and report preparation on air environment
238.	Environmental Impact Assessment of Distillation Facilities (Cauvery Basin), Nagapattinam, Tamil Nadu	Madras Refineries Ltd.	1989	Data analysis
239.	Environment Impact Assessment of Dankuni Coal Complex, West Bengal	Coal India Ltd., Calcutta	1989	Data analysis
240.	Environmental Impact Assessment of Manuguru Coal Project, Manuguru, Andhra Pradesh	Singarenies Collieries Co. Ltd, Kothagudem	1989	Noise and vibration studies

S.No	Title of project	Sponsor	Start date	My role in the study
241.	Environmental Impact Assessment of Lube Plant Expansion, Madras	Madras Refineries Ltd., Madras	1989	Data analysis

Sponsoring/Associated Agencies

I. International

- Asian Development Bank
- Department of Public Works and Highways (DPWH)
- EAWAG, Switzerland
- European Commission
- Global Innovation Initiative (GII), USA
- IHE, Delft, Netherlands
- International Union of Conservation for Nature
- Ministry of Public Health, Bhutan
- Save the Children
- Swedish International Development Agency
- SINTEF, Norway
- United Nations Development Programme
- United Nations Children's Fund (UNICEF), India
- UNICEF, Ethiopia
- UNICEF, Mozambique
- World Bank
- World Health Organization, SEARO, Delhi
- World Health Organization, Bhutan
- World Health Organization, Geneva
- World Health Organization, Maldives

II. Central Government/Public Sector

- Bharat Oman Refineries Limited
- Bharat Petroleum Corporation Limited
- Central Public Health and Environmental Engineering Organization (CPHEEO), Ministry of Housing and Urban Affairs
- Central Public Works Department, Chhatisgarh
- Department of Biotechnology
- Department of Drinking Water and Sanitation (erstwhile Ministry of Drinking Water and Sanitation)
- Department of Science and Technology
- Gas Authority of India Limited
- Hindustan Organic Chemicals Limited
- Hindustan Petroleum Corporation Limited
- Indian Oil Corporation Limited
- Indian Petrochemicals Corporation Limited
- Indian Strategic Petroleum Reserves Limited
- Kudremukh Iron Ore Company Limited
- Madras Refineries Limited
- Mangalore Refinery and Petrochemicals Limited
- Ministry of Jal Shakti (erstwhile Ministry of Water Resources)

- Ministry of Environment, Forests and Climate Change
- Ministry of Shipping and Transport
- Ministry of Statistics and Programme Implementation
- Mumbai Port Trust
- National Aluminium Corporation Limited
- National Highway Authority of India
- National Hydroelectric Power Corporation Limited
- National Mission for Clean Ganga
- National Thermal Power Corporation Limited
- Nuclear Power Corporation India Limited
- Oil India Limited
- Oil and Natural Gas Corporation Limited
- Paradip Port Limited
- Rashtriya Chemicals & Fertilizers Limited
- THDCIL Limited

III. State Govt.

- Chattisgarh State Electricity Board
- Department of Environment, Maharashtra
- District Mining Foundation, Gadchiroli, Mahrashtra
- Drinking Water Supply And Sanitation Department (DWSD), Jharkhand
- Gujarat State Petronet Limited
- Madhya Pradesh Power Generating Company Ltd
- Maharashtra State Electricity Board
- Municipal Corporation, Gwalior
- Municipal Corporation, Jabalpur
- Orissa State Pollution Control Board
- Public Health Engineering Department, Chhattisgarh
- Public Health Engineering Department, Rajasthan
- Punjab Pollution Control Board
- Rajasthan Vidyut Utpadam Nigam Ltd.
- Rajiv Gandhi S&T Commission, Maharashtra
- Rural Water Supply and Sanitation Department, Odisha
- Tamil Nadu Industrial Development Corporation
- Tamil Nadu Pollution Control Board
- Uttar Pradesh Jal Nigam
- Water and Sanitation Department, Maharashtra
- Water Resources Department, Maharashtra

IV. Industries - National

- Abhishek Developers
- Adani Power Limited
- Alembic Pharmaceuticals Ltd.
- Asian Paints India Ltd.

- Andhra Sugars
- Ballarpur Industries Ltd.
- Bhilai Steel Plant
- CIPLA Ltd.
- Dighi Port Pvt. Ltd.
- Dony Polo Petrochemicals Ltd.
- Electrosteel Castings Ltd.
- ESSAR Oil Ltd.
- ESSEL World
- Ernst & Young
- Grasim Industries Ltd.
- Gujarat Pipavav Port Ltd.
- Gujarat Positra Port Infrastructure Ltd.
- Gujarat Industrial Power Corporation Ltd.
- Gujarat Alkalies and Chemicals Ltd.
- GMR Energy Ltd.
- Hazira Port Pvt. Ltd.
- Hindustan Oil Exploration Company Ltd.
- Jindal Steel and Power Limited
- Jindal Vijaynagar Steel Pvt. Ltd.
- JSW Energy Ltd.,
- Kerala Infrastructure Development Corp.
- Konkan Railway Corporation Ltd., Maharashtra
- Kota Thermal Power Ltd.
- Lavasa Corporation Ltd.
- Paradeep Phosphates Ltd.
- Patel Engineering Ltd.
- Pipavav Ship Dismantling & Engineering Ltd.
- Pipavav Power Company Ltd.
- Pipavav Shipyard Ltd.
- Positra Port Pvt. Ltd.
- Reliance Petrochemical Ltd.
- Reliance Industries Ltd.
- Reliance Energy Ltd.
- Sahara India Pvt. Ltd.
- Steel Authority of India
- Saurashtra Chemicals Ltd.
- Search Chem Industries Ltd.
- Sea Kind Infrastructure Ltd.
- SECON Pvt. Ltd.
- Solaris Chemicals Ltd.
- Tata Petrodyne
- Tata Power Limited
- Tata Steel Company Ltd.
- United Phosphorus Ltd.

- Zuari Industries Ltd.

V. Industries - Multi-National

- American Society of Safety Engineers (Kuwait Chapter)
- Belhasa International Company (LLC)
  British Gas International (India)
- Cairn Energy India Pty. Limited
- Cocacola India Inc,
- Enron Oil & Gas India Limited
- Global Tech, Dubai
- Hindustan Oman Petroleum Company Limited
- Mitsui & Company, Japan
- Mosbacher India L.L.C
- Niko Resources Limited
- OAO Gazprom, Russia
- Petroleum India International (PII)
- Petro Energy Products Company India Limited
- Rio Tinto Orissa Mining Limited
- Shell India Private Limited
- South Asia LPG Company Limited
- GIZ India Limited