ANNUAL MGC Update 2024-2025

mu gamma

MD's desk

Dr Girija K Bharat
Managing Director, Mu Gamma

It is with great pleasure that I welcome you to this year's edition of the Mu Gamma Consultants Annual Newsletter.

As Managing Director, I take immense pride in the impactful work our team has accomplished over the past year. At Mu Gamma Consultants, our mission is rooted in creating sustainable solutions to some of the most pressing environmental challenges of our time. From tackling contaminants of emerging concerns (CECs) and promoting wastewater reuse to addressing the mounting concerns of plastic waste, our commitment remains unwavering.

This year, we have expanded our efforts in climate change adaptation, supported the advancement of the Sustainable Development Goals (SDGs), integrating ESG principles and artificial intelligence (AI) in our core areas of work. Through collaborations, research, and field-level interventions, we continue to drive forward innovative approaches to environmental management and policy.

This newsletter reflects our journey—highlighting key achievements, sharing expert insights, and celebrating the collective effort of our team, partners, and stakeholders.

We are extremely thankful to our funding agencies—Norwegian Embassy in New Delhi, GIZ, Bureau of India Standards (BIS), Research Council of Norway, The World Bank and Asian Development Bank (ADB), collaborators and partners for the continued support. Together, we move toward a cleaner, more resilient, and sustainable future.

INSIDE...

In Conversation

Expert Interview : Ms. Debashree Mukherjee (IAS)

Secretary (DoWR, RD & GR), Ministry of Jal Shakti, GOI

Q. The Ministry of Jal Shakti has been making exemplary strides towards water security of India and your contribution has been immense. The recently launched draft model bill on Integrated Water Resources Management Authority (IWRM) at the state level is an example. Can you please elaborate on the top three key aspects of it?

A. Top three key Aspects of Draft Model State IWRM Bills:

- State IWRM Council headed by Chief Minister - The Draft Bill envisages setting up of State IWRM Council headed by Chief Minister and comprising of Ministers in-charge of other water related departments in the State. The State IWRM Council will be responsible for approving the overall State IWRM plan and other policy related matters.
- State Integrated Water Resources Management Authority - This Model Bill creates a multi-disciplinary State-IWRM Authority which will perform technical, regulatory, planning, coordination and oversight functions. The Authority is intended to operate in conjunction with existing state water agencies such as irrigation, water supply and sanitation departments, urban local bodies, etc.
- Participatory Approach for Water Management Plans - Keeping the principle of subsidiarity in mind, the Draft Model Bill envisages a governance architecture that comprises Integrated Water Resource Management councils at the panchayat, block, municipal, district levels also apart from the State Council.

Q. There is a lot of debate and discussion on reducing environmental contaminants in our surface water sources. How do you see India gearing up towards this?

A. We have some wonderful initiatives that are successfully working towards pollution control and river rejuvenation:

The National River Conservation Plan (NRCP) is a Centrally Sponsored Scheme for conservation of rivers (excluding the Ganga and its Tributaries) on a cost sharing basis (60:40 / 90:10) by providing financial/technical assistance to States/UTs. The Central Government took the initiative of river pollution abatement programme with the launching of the Ganga Action Plan (GAP) in 1985. The Ganga Action Plan was expanded to cover other rivers under the National River Conservation Plan (NRCP) in the year 1995. Since then, the scheme has been continued from time to time. The last continuation of the NRCP was approved by the Cabinet Committee on Economic Affairs (CCEA) from FY 2021-22 to 2025-26 with an outlay of Rs.1252 crore, which was later enhanced to Rs.2652 crore. The objective of NRCP is to improve the water quality of rivers, which are major water sources in the country, through the implementation of pollution abatement works in various towns along identified polluted stretches of rivers on a cost sharing basis between the Central and State Governments.

Schemes taken up under the NRCP programme are aimed primarily at reduction in pollution load in rivers. Apart from improvement in water quality of rivers leading to better public health and ecology of the river systems, the pollution abatement works taken up under NRCP help to improve aesthetics & sanitation in the towns and maintain a cleaner environment.

Presently, NRCP (excluding Ganga and its tributaries) has covered polluted stretches of 57 rivers spread over 17 States at a sanctioned cost of Rs. 8931 crore. An amount of Rs.3766.81 crore has been released to various State Governments for the implementation of various pollution abatement schemes and a treatment capacity of 2941.03 million liters per day (MLD) has been created so far under the NRCP, resulting in a reduction in the pollution load being discharged into various rivers. Without this intervention, river water quality would have further deteriorated.

Moreover, the Government of India (GoI) launched the Namami Gange Programme (NGP) in 2014-15 for the rejuvenation of river Ganga and its tributaries for five years, up to March 2021 and has been further extended to March 2026. Under the **Namami Gange Programme**, a diverse and holistic set of interventions for cleaning and rejuvenation of river Ganga and its tributaries have been taken up, that includes wastewater treatment, solid waste management, riverfront management (ghats and crematoria), ensuring e-flow, rural sanitation, afforestation, biodiversity conservation, public participation, etc.

The following are some contributions of the Namami Gange Programme aimed at improving water quality along the River Ganga and its tributaries:

- A total of 206 sewerage infrastructure projects costing 33,004 crores have been taken up for the remediation of polluted river areas with a treatment capacity of 6,335 Million Liters per Day (MLD). 127 STP projects with a capacity of 3,446 MLD have been completed and made operational;
- For industrial pollution abatement, 3 nos. of Common Effluent Treatment Plants (CETPs) have been sanctioned, i.e., Jajmau CETP (20 MLD), Banther CETP (4.5 MLD), and Mathura CETP (6.25 MLD). Two projects, Mathura CETP (6.25 MLD) and Jajmau CETP (20 MLD), have been completed;
- Annual inspection of Grossly Polluting Industries (GPIs): To monitor the industries' pollution, annual inspections of Grossly Polluting Industries (GPIs) started in 2017. In seventh round of inspection, 4246 Grossly Polluting Industries (GPIs) have been inventoried in the 7th round of inspection. All the GPIs have been inspected. So far, out of 4,000 GPIs on which action has been completed, 2682 GPIs are compliant, 517 are non-compliant, 523 GPIs are temporarily closed, and 278 GPIs are permanently closed. Among the non-compliant (517 GPIs), 26 GPIs have been issued notice for closure and 491 GPIs have been issued show cause notice. These efforts have resulted in reduction in BOD load from 26 tons per day (TPD) in 2017 to 13.73 TPD in 2023, and about 28.6 % reduction in effluent discharge from 349 MLD in 2017 to 249.31 MLD in 2023.
- At NMCG, an on-line dashboard "PRAYAG" has been operationalized for continuous monitoring of river water quality, the performance of Sewage Treatment Plants (STPs), etc. on the Ganga and Yamuna River;
- Construction of independent household toilets in 4,507 identified villages in the five River Ganga States has been completed. All these Ganga bank villages have now been declared open defecation-free (ODF). Further, till date, 3,679 nos of Ganga villages have been declared ODF sustainability (ODF Plus);
- A total no. of 139 District Ganga Committees (DGC) have been constituted, which conduct 4M (Monthly, Mandated, Minuted, and Monitored) meetings regularly. As of December 2024, more than 3,781 meetings have been conducted;

Comprehensive **public awareness campaigns** have been undertaken to instill a sense of responsibility and engagement among the public in efforts to clean and conserve the Ganga River. These include - Ganga Utsav, Nadi Utsav, regular cleanathons and plantation drives, Ghat Par Yoga, Ganga Aartis, etc.

The efforts are also supported by dedicated cadres of Ganga saviours, such as Ganga Praharis, Ganga Vichar Manch, Ganga Doots, etc. There are several initiatives taken under the Namami Gange Program which are directly and indirectly regulating river pollution.

In addition to the above topic, contaminants like nitrate, iron, arsenic, fluoride and heavy metals beyond permissible limits (as per BIS) have been reported in isolated pockets in ground water in the country. To assess and address groundwater quality contamination, groundwater quality throughout the country is monitored on a regular basis from nearly 17,000 monitoring stations by CGWB.

Q. How do you see the role of the purpose-driven private sector in taking forward the vision of the Ministry of Jal Shakti? Are there specific do's and don'ts for the private sector you would want to highlight?

A. The purpose-driven private sector plays a crucial role in advancing the vision of the Ministry of Jal Shakti by contributing expertise, innovation, and efficiency in water management and sewage infrastructure projects. The Government of India has already fostered private sector participation through the Hybrid Annuity PPP model, approved in January 2016, with 100% central sector funding. Under this model, a Special Purpose Vehicle (SPV) is responsible for the development, operation, and maintenance of sewage treatment plants (STPs). The structured payment mechanism—where 40% of the capital cost is paid upon construction completion, and the remaining 60% is paid over the project's lifecycle as annuities with interest and O&M costs—ensures accountability and optimal performance. Under the Namami Gange programme, a total of 34 projects have been taken up at a cost of ₹ 12,694 crore; out of these, 16 projects have been completed. Several private sector companies and NGOs working in the water sector have been doing a commendable job in understanding and promoting community-level institutional approaches to water management and facilitating peer learning and sharing innovative, sustainable water management practices.

Dos:

Focus on **sustainable practices, efficiency**, and **innovation**; **engage stakeholders** for implementation of water management plans that address local concerns; and **monitor both water usage and quality** to address water challenges and ensure security. **Transparency** to be maintained about water usage and environmental impacts to build trust and accountability.

Don'ts:

- Don't prioritize short-term gains over long-term water security and environmental impacts.
- Do not neglect water quality issues which can pose health risks and damage ecosystems.
- Do not ignore the needs and concerns of stakeholders.

Q. Mu Gamma Consultants has highly valued the collaboration with MoJS for several years. What are some of your thoughts about this collaboration?

A. Mu Gamma Consultants have been working in the domain of Safe Reuse of Treated Water and have worked on the formulation of a National Framework for Safe Reuse of Treated Water. The organization is also working on the development of state policies/framework for reuse of treated water. The organization is also likely to collaborate with NMCG for the development of a city plan for one district and also for developing a podcast for inclusion in the Ganga Knowledge Portal.

Projects in Brief (Update)

India-Norway cooperation project on capacity building for reducing plastic and chemical pollution in India (INOPOL) (2022-2025)

Building on the established and high-functioning partnerships in the **India-Norway cooperation project on capacity building for reducing plastic and chemical pollution in India**, this project aims to support the reduction of plastic pollution and Persistent Organic Pollutants (POPs) in India in the states of Tamil Nadu and Uttarakhand. The project is sponsored by the Norwegian Ministry of Foreign Affairs and the Norwegian Embassy in New Delhi. MGC is the country lead of the project, with NIVA, SRMIST, CIPET, and Toxics Link as partners.

A comprehensive study on decentralized wastewater management systems for Bureau of Indian Standards (BIS) (2025)

The project aims to conduct a comprehensive study on decentralised wastewater management (DWM) systems, focusing on their design, installation, operation, maintenance, and waste disposal practices. This will be used to develop a framework for the effective management of DWM systems that incorporates best practices and performance indicators, including safety requirements and rapid response mechanisms.

Water sensitive cities and partnerships (2024)

MGC implemented this World Bank funded project that aimed to assess the urban river management status in Odisha; assess Odisha government's 'Drink from Tap program'; review and evaluate the lessons learnt from the urban livelihood's programs in Odisha and Rajasthan; develop video and dissemination note on the contributions of the World Bank-financed inland water transport, logistics and spatial development project in West Bengal, and conduct knowledge management, partnership and coordination activities in several states in India.

Multi-scale Analysis of the Health Attributes of Plastic Recycling in India (MAHAT) (2025-28)

The project aims to elucidate the health implications of plastic recycling in India and contribute to safeguarding workers and the wider public from the risks posed by hazardous substances and particles emitted by the plastic scraping, sorting, repelleting industry (PSSRI)- a segment of the informal waste recovery sector that so far has escaped research attention. This is supported by the Research Council of Norway and implemented by the Norwegian Institute for Water Research (NIVA), SRM Institute of Science & Technology (SRMIST), Norwegian Institute for Air Research (NILU) and Mu Gamma Consultants (MGC).

Water and wastewater laboratory improvement program in the Republic of Georgia (2023-2024)

The project focussed on improving the procedures for water, wastewater, and sludge analysis in the laboratories of the United Water Supply Company of Georgia (UWSCG). With ADB funding, UWSCG aimed to modernise its operational service centres and laboratories in conformity with international standards, as well as enhance and broaden the laboratory services for its water and wastewater operations. In order to fill in the gaps in the current laboratory equipment, procedures, and personnel capability at UWSCG laboratories and service centres, MGC rendered its services as a global specialist in water and wastewater laboratories.

Policy coordination and facilitating high level missions and events as part of India-EU Water Initiative (2025-27).

The India-EU Water Initiative (IEWI) aims to enhance EU-India cooperation on technological, scientific, and management aspects of water management, as well as related joint EU-India business opportunities and partnerships between regions and cities in the water sector.

Building on the Global Gateway Strategy, the IEWI (Action Phase III) will strive to **leverage synergies with other EU-funded projects**, or EU-Member States supported

projects, wherever possible. **IEWI Action Phase III** aims to strengthen the means of implementation and revitalize the global partnership for sustainable development and the Paris Agreement on climate change. This project is supported by GIZ and implemented by VITO, Belgium and Mu Gamma Consultants.

Safe Reuse of Treated Water (SRTW) in Uttar Pradesh and Uttarakhand

Under NMCG, Mu Gamma is working towards developing SRTW policies for the states of Uttarakhand and Uttar Pradesh. In close collaboration with GIZ, NMCG, and SMCG teams, workshops were conducted in Dehradun and Lucknow, respectively, with various experts and stakeholders in the region. Feasibility studies of the safe reuse of treated water have been conducted in Haridwar, Uttarakhand and Ghaziabad, Uttar Pradesh, to make an assessment of the reuse potential of treated water for application in industries, agriculture and urban reuse purposes.

Urban climate change and partnerships (2024-2025)

MGC is implementing this World Bank funded project that aims to assess urban climate change issues in India; review and assess national and state level policies and programs; prepare good practice notes on certain identified topics; review urban livelihoods and job opportunities in selected Indian cities; assess urban water related issues; as well as provide support to knowledge management, partnerships and coordination activities on climate smart urbanization in different states in India.

Developing e-modules for dissemination of the Manual on Water Supply and Treatment Systems (Drink From Tap)

This Water Manual is developed by the Ministry of Housing and Urban Affairs, Government of India. This project involves stakeholder consultation for developing framework for an Urban Water Association (UWA) to strengthen the urban water sector in India. This is supported by GIZ and the Ministry of Housing and Urban Affairs, Govt. of India, under the SMART Cities Mission.

Awards and Recognitions

STE International Achiever Award 2024


SAVE THE ENVIRONMENT (STE)

STE International Achiever Award-2024

Presented to

Ms. Avanti Roy-Basu
Associate Director
Mu Gamma Consultants Pvt. Ltd.
Redmond, WA.

for her relentless contribution in the fields of Policy Design and Strategization for Water Resource Management and Environmental Management.

Save the Environment wishes her great success in her future endevour.

Dr. Kshipra Misra
President, STE

Mrs. Chhanda Basu
General Secretary, STE

Ms. Avanti Roy Basu, Associate Director, MGC, received the prestigious STE International Achiever Award 2024. Presented by Save The Environment (STE), this award recognises her relentless efforts and significant contributions to policy design and strategization in water resource management and environmental management.

Women Entrepreneurship Award from Delhi Management Association

Dr. Girija Bharat, Managing Director, MGC, received the prestigious Businesswoman Entrepreneur of the Year Award at the 13th All India Women Entrepreneurs Awards and Conference 2024 by the Delhi Management Association. The award recognises the women who make it happen—driving innovation, growth, and impact across India and inspiring future generations.

Aqua Foundation's Excellence Award 2024

Dr. Sonia Grover, Senior Research Scientist, has been honoured with the Aqua Foundation's Excellence Award 2024 (Water & Environment) under the Professional Excellence (Individual category) at the 16th World Aqua Congress held in New Delhi. This accolade recognises her exceptional contributions to water and environmental sustainability. Her dedication and pioneering efforts continue to inspire us at MGC.

Professional Excellence Award for the year 2024

Mr. Nathaniel Bhakupar Dkhar, Senior Research Scientist, MGC, received the Professional Excellence Award for the year 2024 at the MGC Annual Retreat for his dedication and exemplary contributions towards the growth and development of MGC.

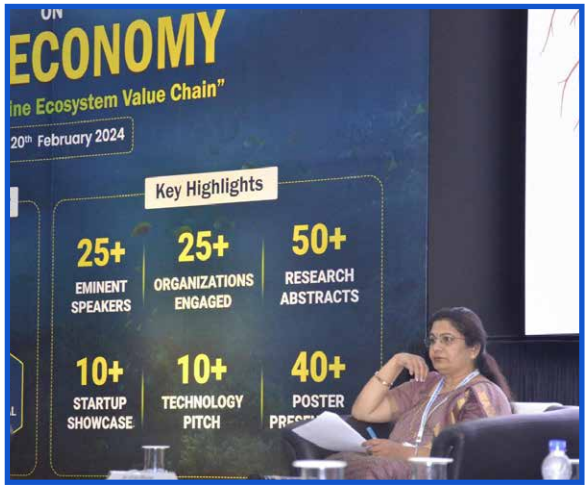
Events and Talk Sessions

Public health uncoded podcast (Episode 9): Impact of POPs and EDCs

Dr. Saroj Pachauri (The POP Movement) and Dr. Girija Bharat explored the health and environmental impacts of persistent organic pollutants (POPs) and endocrine-disrupting chemicals (EDCs). They discussed regulatory challenges, public health risks, and the urgent need for public awareness to address these invisible threats. Watch it.

National Conference on Blue Economy held at KIIT Bhubaneswar

Dr Girija Bharat participated in the National



Conference on Blue Economy held at KIIT Bhubaneswar from 10-12 February 2024, where MGC was a knowledge partner. Dr. Girija Bharat delivered an insightful power talk in the session 'critical interconnections between climate change, disaster management, and deep-sea mining', underlining the importance of marine plastic pollution monitoring and control.

WSDS Event: Reducing Plastic and Chemical Waste in the Marine Environment

At the World Sustainable Development Summit (WSDS) 2024, a thematic event titled ***Reducing Plastic and Chemical Waste in the Marine Environment***, featuring a panel of experts from the Norwegian Institute for Water Research (NIVA), Toxics Link, CIPET Bhubaneswar, Mu Gamma Consultants, and SRM Institute of Science and Technology (SRMIST) was organized. The discussions focused on enhancing knowledge and building capacities to address plastic and chemical pollution, with a comprehensive examination of its social, economic, and environmental impacts.

The key discussions highlighted opportunities for reducing marine pollution, fostering cross-sectoral collaborations, and strengthening the research foundation to inform policy decisions. Participants explored the role of science-based policies in supporting pollution reduction, the application of global research insights in the Indian context, and India's contributions to global efforts in managing pollution and protecting marine ecosystems.

WSDS 2025

The event titled '**Science and Policy Action on Reducing Plastic and Chemical Waste in the Marine Environment**', was organised on March 5, 2025, during the World Sustainable Development Summit (WSDS) 2025. This is part of the **Norway-India Marine Pollution Initiative** established between Indian and Norwegian authorities. The keynote address was given by **Her Excellency Ms. Martine Aamdal Bottheim**, Minister Counsellor, Deputy Head of Mission, Royal Norwegian Embassy in New Delhi. The special address was delivered by **Shri Ved Prakash Mishra, Joint Secretary, Ministry of Environment, Forestry, and Climate Change, Government of India**.

Two baseline reports titled '**Baseline Report on Plastic Waste Management in Tamil Nadu, India: Perspectives and Pathways**' and '**Hazardous but Invisible: A Baseline Report on Persistent Organic Pollutants (POPs) in Tamil Nadu, India**' were released by the dignitaries at the dais.

INOPOL: International Conference on Plastic Pollution and Marine Litter

On June 7, 2024, the International Conference on Plastic Pollution and Marine Litter, organised by the Norwegian Embassy in Chennai, featured a Fireside Chat with distinguished panellists. The session included Dr. Girija Bharat, Dr. Jayanthi Murali, Chairperson of the Tamil Nadu Pollution Control Board, India; Mr. Semund Haugland from NORAD; and Professor Terney Kumara from the University of Ruhuna. The discussion centered on policy dialogue, potential solutions, and the roadmap for addressing plastic pollution and marine litter.

Water and Waste Management Conclave

Mu Gamma Consultants and the Centre for Economic Policy Research successfully hosted the ***'Water and Waste Management Conclave'*** on February 6, 2024. The conclave was organised to ensure widespread awareness and dissemination of knowledge and experience about Contaminants of Emerging Concern (CECs). These chemicals pose a perceived, potential, or real threat to human health or the environment.

The event witnessed the presence of Hon'ble Shri Gajendra Singh Shekhawat, the then Minister of Jal Shakti, Government of India, as the esteemed Chief Guest, delivering an insightful inaugural address. The event was graced by the presence of H.E. Ms. Martine Aamdal Bottheim, Minister Counsellor, Deputy Head of Mission from the Embassy of Norway to India; Ms. Debashree Mukherjee, Secretary (DoWR, RD&GR), Ministry of Jal Shakti, Government of India; Dr. S K Sarkar, IAS (Retd.), Distinguished Fellow, TERI, New Delhi; Dr. Subhash Sharma, Director, Centre for Economic Policy Research (CEPR), New Delhi; Dr. K Rajeswara Rao, IAS (Retd.), Former Special Secretary, NITI Aayog, Government of India; Dr. Jonathan Demenge, Head of Cooperation, Swiss Agency for Development & Cooperation, Delhi; and Dr. Manish Kumar, Former CEO and MD, National Skill Development Corporation (NDSC).

Minister Shekhawat underscored the gravity of the global water pollution challenges and emphasised the critical role of such platforms where knowledge exchanges support sustainable management of water resources. He commended the organisers for initiating deliberations on this crucial issue and highlighted the transformative initiatives undertaken by the Government of India to address water pollution and ensure water security.

The event featured insightful discussions by the panel of esteemed experts: Dr. Paromita Chakraborty, Professor and Head, REACH, SRM Institute of Science and Technology (SRMIST); Dr. Hans N. Adam, Senior Research Scientist, NIVA, Norway; Ms. Pallavi Kumar, representative from JHPIEGO; Mr. Satish Sinha, Associate Director, Toxics Link; Dr. Noor A. Khan, Principal Scientist, CSIR-NEERI, Delhi; Dr. Sissel B. Ranneklev, Senior Research Scientist, NIVA, Norway; and Dr. Suneel Pandey, Senior Fellow and Director, Environment and Waste Management, TERI.

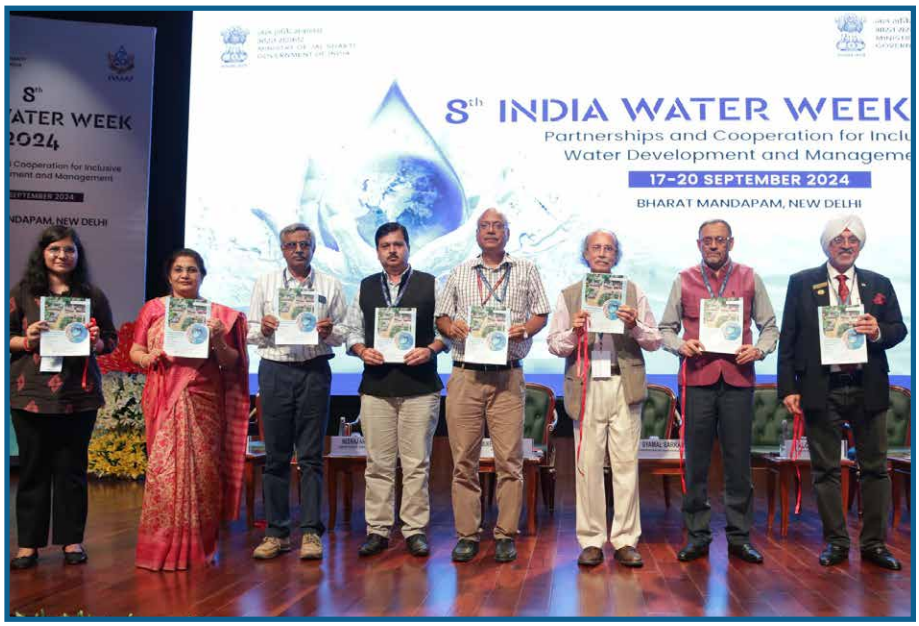
Doordarshan talk by Dr. Girija Bharat देश का गौरव: नारी शक्ति

On March 8, 2024, Dr. Girija Bharat participated in the Doordarshan national television program (Desh ka Gaurav Nari Shakti), which was dedicated to women leaders across several sectors and focused on women's empowerment. Dr. Girija Bharat highlighted the pivotal role of women in the fight against pollution and emphasised their significant contribution through community engagement. She underscored the importance of empowering women to actively participate in decision-making processes and recognising them as key stakeholders in the journey towards sustainability. Dr. Bharat stressed that women's involvement is essential for achieving sustainable and inclusive development.

INOPOL sampling visits

As part of the INOPOL project, sampling visits were conducted to collect data in Tamil Nadu during the pre-monsoon and post-monsoon seasons in February and November of 2024. These visits successfully covered different locations from Erode, Trichy, Thanjavur and the famous Pichavaram Mangrove forests. The team members from NIVA, Toxics Link, MGC, SRMIST, and CIPET Bhubaneswar participated in it.

Launch of Discussion Paper at the 8th India Water Week



During the 8th India Water Week 2024, held at Bharat Mandapam, New Delhi, the Ministry of Jal Shakti officially released a discussion paper titled "Climate Resilience in Water Resource Management in India - A Conceptual Framework for Action", authored by Ms. Neha Lakhwan, Dr. Girija Bharat, and Dr. Syamal Sarkar. The paper was unveiled during the thematic session on 'Demand Management and Water Use Efficiency'. A session on Integrated Water Resources Development and Management was moderated on 8th India Water Week, focusing on knowledge transfer and skill development and the design of optimal cropping patterns to enhance efficient water resource utilisation. Dr. Girija Bharat moderated the session. The discussions emphasised the importance of capacity building and innovative strategies for sustainable water management practices.

MGC Retreat

Mu Gamma Consultants organized its Annual Retreat at TERI Gram, Gwal Pahari, Gurugram, on 6th April 2024. Dr. Megha Bansal (Mindset & Performance Coach, Mind Life Bliss) conducted the Performance Mastery Program through fun-filled activities for all participants. This Mind Mastery Program helped to shape professional and personal lives, including health, work-life balance, career, relationships and peak performance. The day concluded with a valedictory session. Mr. Dhiraj Jayani (Founder, Prime Axis Gurugram) gave a special address and highlighted how confusion and fear can be countered with research and science. Mr. Sujoy Mojumdar (Sr WASH Specialist, UNICEF India) pointed out how the government focuses more on pilot areas in the initial stage of big projects and then takes it towards planned implementation. The retreat provided a conducive environment for reflection, brainstorming, and fostering camaraderie among colleagues.

UNOPS side event at the Water Transversality Global Awards and Conclave

On December 6, 2024, Dr. Girija Bharat was one of the panelists at the UNOPS India side event, "Waters of Change: Building Resilience Amidst a Climate Crisis".

This impactful event brought together global leaders, experts, and policymakers, like Mr. Rajiv Ranjan Mishra, Prof. Santosh Mehrotra, Mr. Kalimuthu Arumugam, Dr. Suparana Katyaini, and Saraswati Prasad, to address the intricate relationship between water security, climate change, and sustainable development Dr. Bharat shared insights on various critical aspects of sustainable development. She emphasised the importance of integrating water management into climate policies to address the growing challenges posed by climate change. She highlighted the need for advancing innovative solutions that promote sustainable water management practices, ensuring the optimal use and preservation of water resources.

The Zero Waste Webinar hosted by the United Nations Secretary-General's Advisory Board on Zero Waste on October 24, 2024

Dr. Girija Bharat moderated the session during a webinar by the United Nations Secretary-General's Advisory Board on Zero Waste. The webinar, hosted by the COP29 Presidency and the UN Secretary-General's Advisory Board on Zero Waste, aimed to promote global zero-waste transitions by promoting innovative national and local initiatives. The webinar discussed global waste challenges, climate financing, and climate action, particularly in the face of COP29. It also explored strategies to mitigate and track emissions from municipal waste, highlighting innovative solutions and best practices to contribute to a climate-resilient future.

The Earth Circle | Threads of Change | Weaving communities through youth leadership in sustainability

Mr. Nathaniel Bhakupar Dkhar, shared his experiences as a glaciologist, IWRM and his engagement with youth. Mr. Dkhar has been actively involved in inspiring youth on issues issues of climate change, biodiversity preservation and sustainable development.

Some Other Notable Events

- In October 2024, Dr. Girija Bharat delivered a talk at the **Food Systems Summit 2024**, an event dedicated to knowledge exchange. Invited by Mr. S. Vijay Kumar and TERI—The Energy and Resources Institute, Dr. Bharat spoke in the thematic session "Improving Nutritional Outcomes" on the topic "WASH and Nutritional Outcomes". The session highlighted the critical linkages between water, sanitation, hygiene, and improved nutrition. Dr. Bharat also extended her warm wishes to the FOLU Project for its continued success.
- On October 18th, 2024, Dr. Sonia Grover participated in a session titled ***Water Audit: A Tool for Water Resource Planning and Conservation at the Municipal Level.*** The event was organised by the IPCA Centre for Waste Management and Research, TERI SAS, in collaboration with the Uttarakhand Pollution

Control Board (UKPCB). The session focused on the role of water audits in sustainable resource management and municipal-level conservation strategies.

- At Jal Jagar 2024, Dr. Girija Bharat delivered a talk during the ***Community-Led Water Governance*** session on ***Climate Resilience in Water Resource Management in India.*** She emphasised integrating traditional knowledge with modern techniques and highlighted the importance of empowering communities to promote sustainable water use. The event provided a platform for engaging with thought leaders and experts dedicated to addressing water security challenges and fostering a climate-resilient future.

- The capacity-building program: "Insights and practices for reducing plastic pollution and POPs in India" under the India-Norway Marine Pollution Initiative-Project INOPOL was successfully conducted on September 30th and October 1st, 2024. Leading experts from NIVA, Central Institute of Petrochemicals Engineering & Technology (CIPET), MGC, SRM Institute of Science and Technology (SRMIST), and Toxics Link delivered several sessions on reducing plastic and POPs pollution in the marine environment. Experts from state pollution control boards and relevant industries participated in the event. The key takeaways from the programme were:
  - Comprehensive insights into regulatory frameworks and international efforts, including the ongoing plastics treaty negotiations.
  - Innovative technologies and methods for monitoring plastics and POPs.
  - Sampling protocols and instrumentation techniques in identifying microplastics and various classes of POPs.
  - Multi-stakeholder discussions on driving policy and practice for a cleaner environment.

- On July 17th, 2024, a session of ***Wednesdays for Water!*** was held, focusing on the "Qualitative Aspects of Urban and Rural Water Supply". The discussion featured Mr. Nathaniel Bhakupar Dkhar, as the discussant. The session was moderated by Dr. Mansee Bal Bhargava, with Mr. Rakesh Verma and Mr. Puneet Srivastava as speakers, providing valuable insights into the topic.

Capacity Building and Trainings

Field training under Project INOPOL in Norway

A one-week field training was organised under the INOPOL project at the NIVA office in Oslo, Norway. Participants from the Tamil Nadu Pollution Control Board, MGC, CIPET and Toxics Link attended the training. The field sampling included microplastics sampling from Alna River, followed by in-depth laboratory analysis with µ-FTIR.

International Capacity Building Programme (ICBP-2024) at CSIR-NEERI, Nagpur

A two-day International Capacity Building Programme (ICBP-2024) was organized on August 5-6, 2024, at CSIR-NEERI, Nagpur, Maharashtra. The event focused on "Best practices for collection and analysis of silicones in different environmental matrices". It was organised by the Global Silicones Council (GSC) and CSIR-NEERI. The training programme was attended by Dr. Kriti Akansha and Ms. Neha Lakhwan from Mu Gamma.

Publications

- Akansha, K., Jain, M., Sharma, B. M., & Bharat, G. K. (2024). Global environmental occurrence of heavy metals. In P. Chakraborty, G. K. Bharat, B. M. Sharma, & P. Singh (Eds.), Endocrine-disrupting chemicals (pp. 237-247). Elsevier. https://doi.org/10.1016/B978-0-12-823897-4.00003-4.
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