







# ANNUAL MGC UPDATE

FEBRUARY 2024



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## MD'S DESK

I am pleased to share with you the remarkable strides Mu Gamma has made over the past year. It is both a privilege and an honor to reflect on our accomplishments and the positive impact we continue to make in the realm of Water, Sanitation and Hygiene (WASH), Wastewater reuse, Plastic Waste Management, and Contaminants of Emerging Concerns (CECs). Our ventures not only showcase our commitment to addressing crucial environmental challenges but also underscore our expertise in providing sustainable solutions.

Over the course of the year, we have published several articles that delve into cutting-edge research, innovative technologies, and best practices. These publications not only elevate our organizations's profile but also demonstrate our role as thought leaders in the environmental consulting domain. This has been further recognized with the receipt of prestigious awards in the past year.

At the heart of our success lies the collective effort of our talented team. Their unwavering commitment to excellence, coupled with their passion for environmental stewardship, has been instrumental in driving our projects forward and solidifying our reputation as a trusted partner in the sector.

Looking ahead, we remain steadfast in our commitment to sustainability, innovation, and client satisfaction. Our journey is guided by a vision of a cleaner, greener future, and we are excited about the opportunities and challenges that lie ahead.

I extend my gratitude to our clients, partners, and team members for their continued support. Together, we will continue to forge a path towards a more sustainable and resilient environment and society.



**Dr Girija K Bharat**  
Managing Director,  
Mu Gamma

Sincerely,  
**Girija K Bharat**



## PROJECTS IN BRIEF

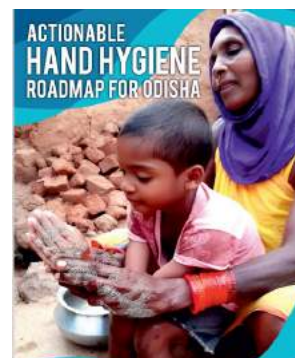
### India-Norway Cooperation Project on Capacity Building for Reducing Plastic and Chemical Pollution in India (INOPOL) (2022-2025)

The INOPOL project aims to address the highly interlinked challenges regarding marine litter, microplastics, and Persistent Organic Pollutants (POPs) in India. The INOPOL project is funded by the Norwegian Embassy in New Delhi, India and implemented by the Norwegian Institute for Water Research (NIVA), Mu Gamma Consultants (MGC), SRM Institute of Science and Technology (SRMIST), Central Institute of Petrochemicals Engineering & Technology (CIPET), and Toxics Link (TL). **The project aims to support India's ambitious targets to reduce plastic releases and to implement the Stockholm Convention on POPs by providing science-based knowledge** and strengthening the local and regional capacity to prevent and mitigate the environmental threat posed by plastic and chemical pollution. INOPOL-2 will be further built upon the work of INOPOL-1 (2019-2022), by applying a multidisciplinary, cross-sectoral, and integrated approach to develop a coherent system for data collection in the State of Tamil Nadu and Uttarakhand. INOPOL-2 will be scaled up by establishing baselines, develop monitoring and data collection capacity, supporting the implementation of current policies, assessing local gaps and hurdles, identifying opportunities associated with implementation, and providing science-based advice to local and national government agencies.



### Development of an Actionable Roadmap for Hand Hygiene for Odisha, India (2023-2024)

The Actionable Hand Hygiene Roadmap for Odisha is aimed to 'accelerate universal and equitable access to hand hygiene in all the households and institutions of the Government of Odisha by 2030'. It is based on the guiding principles of inclusivity, context-specific evidence-based, in a phased approach, and follow a co-creation process. The project is funded by UNICEF Odisha and is aimed to co-create a strategy for promoting and sustaining improved hand hygiene in the State of Odisha, incorporating concrete steps for adapting to the changing landscape after COVID-19. The project focussed on identifying and defining the strategy for hand hygiene improvements over a defined period, including intervention areas, responsibilities, targets, and finance mechanisms. This Roadmap has included roles and responsibilities of stakeholders, targets, financing mechanisms as well as the 'Hand Hygiene messages for Communication' for six relevant State Departments, namely the Panchayati Raj & Drinking Water (P&RD), Health & Family Welfare (H&FW), School & Mass





Education (S&ME), Women & Child Development (W&CD), Housing and Urban Development (H&UD), and Scheduled Tribe & Scheduled Caste Development, Minorities & Backward Classes Welfare.

## Implementation of Safe Reuse of Treated Water in India (2022-2023)

Safe reuse of treated water (SRTW) promotes environmental sustainability, reduces water stress, and boosts economic growth. In this context, **Mu Gamma Consultants** along with **the University of Applied Sciences and Arts Northwestern Switzerland (FHNW)**, and **WASH Institute** have developed complementary documents to the National Framework on SRTW to set the context, priorities, and direction for SRTW. This was supported by the **National Mission for Clean Ganga (NMCG)**, Ministry of Jal Shakti, Government of India and **GIZ**, under the **India-EU Water Partnership**. The project

was part of the '**Support to Ganga Rejuvenation (SGR), Phase-II**', and involved co-creation of:

- A **Solution document** that identifies and evaluates feasible business models for SRTW in Panipat, Haryana for different viable end uses.
- A **Business model compendium** that provides ten good business model case studies in India and the European Union on SRTW for different end-uses.

Throughout the SRTW consultation process, the team has identified several barriers that impede water reuse practices in India, such as: public perception, pricing, and regulatory challenges. The team conducted a feasibility assessment involving initial site visits, situation analysis, literature review, stakeholder consultations, and gap assessment. Based on the findings, a Solution Document was prepared for Panipat with potential business models for industries, agriculture and urban uses.



## Asian Scientific Alliance for Plastic Pollution and Value Network Management (ASAP) (2020-2024)

The **International Knowledge Hub Against Plastic Pollution (IKHAPP)** ([www.ikhapp.org](http://www.ikhapp.org)), is a knowledge hub dedicated to combating plastic pollution through the collection, analysis, and dissemination of scientific knowledge for the benefit of policy makers, practitioners and students in the plastic waste management sector. IKHAPP is an important outcome of ASAP project and is being led by Norwegian Institute for Water Research (NIVA), Norway. Mu Gamma, SALT and GRID Arendale are the partners in this project. This project has been funded by the Research Council of Norway. **IKHAPP strives to understand the causes, drivers, and consequences of plastic pollution and evaluates the effectiveness of various measures** to address it. It also recognizes the importance of local and regional insights in fighting this problem on a global scale. With an increasing focus on research and development efforts in plastic pollution, IKHAPP aims to consolidate knowledge and experiences to meet the societal demand for effective solutions. IKHAPP offers a library of peer-reviewed articles, status reports, and newsletters, tailored to different regions and socioeconomic contexts. These resources provide decision-makers and stakeholder organizations with an overview of potential solutions and the latest research on plastic pollution.



## Formulation of a Code of Conduct (CoC) on agricultural plastics (2023-2024)

A series of Knowledge exchange events were conducted for national and international authorities to provide background for **framing effective provisions on agricultural plastics under the upcoming Global Plastic Treaty**. The webinars were aimed at contributing to the formulation of the CoC by involving experts, scientists, policymakers, farmers, and industries operating in the sector.

**On April 24, 2023**, the IKHAPP successfully hosted a webinar titled: **"Agricultural plastics - Identifying knowledge gaps and demands for safe and sustainable use and management."** This webinar was organized by Mu Gamma, NIVA, and GRID Arendale. It marked a significant step towards examining the rapidly evolving agriculture sector in Asia, especially considering climate change, the transition from traditional to mechanized farming, and the socioeconomic challenges related to food security. During the webinar, a digital survey was launched to gather multi-actors' knowledge and perspectives to enable mapping main knowledge gaps.

**On December 11, 2023**, another webinar was hosted by IKHAPP, NIVA, Mu Gamma, and GRID-Arendal. The webinar: **Mapping Knowledge Gaps on Environmental Safety and Sustainability of Agriplastics, focussed on the African and Latin American regions**, was an engaging and insightful session on the sustainable management of agricultural plastics. It included expert presentations on agricultural plastic use in Latin America, small-scale farming and nature-based mulching solutions in Southern Africa, end-of-life management of agricultural plastics, and microplastics in terrestrial environments. A panel discussion delved into critical data gaps and research needs in sustainable management and plasticulture. There was high engagement and interaction throughout the session.





## Water and Wastewater Laboratory Improvement Program in Republic of Georgia (2023-2024)

The aim of this project is to suggest a **Master Plan to United Water Supply Company of Georgia (UWSCG)**, which provides water supply and sanitation services to urban-type settlements of Georgia. UWSCG is in the process of consolidating the existing laboratories, optimizing their number, and creating bigger and more efficient laboratories in Georgia. The objectives are to: Identify the gaps in the existing laboratories, develop the capacity of UWSCGs Laboratory staff, modernize its equipment, and provide a plan for commercializing services of the laboratories of UWSCG. This project is funded by UWSCG and supported by the Asian Development Bank (ADB).



## Creating High-Impact Activities for Strengthening WASH Ecosystem (2024)

Primary health care centers play a pivotal role in the nexus of WASH and health. To achieve sustainable WASH interventions in primary healthcare facilities, it is essential to engage various stakeholders, including healthcare workers, patients, local community members, and policymakers. **NISHTHA, is a flagship health systems strengthening project supported by the USAID and being implemented by Jhpiego to promote healthy hygiene behaviour** among the communities in five states of India, namely: Madhya Pradesh, Jharkhand, Chhattisgarh, Sikkim, and Nagaland. Mu Gamma is assisting the Jhpiego team in strengthening the WASH ecosystem.



# AWARDS AND RECOGNITIONS

## Golden Pinnacle Award-2023 to Mu Gamma

Mu Gamma has been honoured with the Golden Pinnacle Award 2023. This esteemed recognition acknowledges our **exceptional contribution and unwavering commitment to Water Resources Management**. The award was presented at the 36<sup>th</sup> International Achievers' Summit & Awards, organized by the esteemed Indian Achievers Forum, held on April 29, 2023, in Dubai. We are immensely proud to receive this distinguished accolade, which serves as a testament to our dedication and efforts in the field of Water Resources Management. It further motivates us to continue striving for excellence and making a positive impact in this critical domain.



## STE Green Excellence Award – Nathaniel Bhakupar Dkhar-2022

Nathaniel Bhakupar Dkhar, Senior Research Scientist, Mu Gamma, has been bestowed with the Green Excellence Award - 2022. This prestigious recognition was presented at the 4<sup>th</sup> Annual Meet of Save The Environment (STE) held on January 12–13, 2023. **Nathaniel's exceptional contributions in the field of water and wastewater management, as well as sustainable development**, were acknowledged during the event. The Green Excellence Award is a testament to Nathaniel's unwavering commitment and dedication to environmental preservation and sustainable practices. His outstanding work in the area of water and wastewater management has made a significant impact on the industry and exemplifies his leadership in driving positive change. His accomplishments inspire us all to continue striving for excellence in our respective fields and contribute to a greener and more sustainable future.



## Lifestyle for Environment (LiFE) by NITI Aayog-2023

Our collaborative proposal, titled "Achieving Circular Economy Transition in Waste Management Through People's Participation for Sustainable Lifestyles and Practices," has been selected among the **"75 Ideas to Promote LiFE"** from the **"Global Call for Ideas and Papers"**. This recognition acknowledges our dedication to driving positive change in waste management practices by emphasizing community participation for the promotion of sustainable lifestyles. Our proposal's inclusion in the "75 Ideas to Promote LiFE" compendium, published by NITI Aayog, Government of India, further highlights its significance in advocating for a 'Lifestyle for Environment'. The proposal was drafted by Prof Paromita Chakraborty from SRMIST, Girija K Bharat from MGC, and Eirik H Steindal from NIVA.

### Achieving Circular Economy Transition in Waste Management through People's Participation for Sustainable Lifestyles and Practices

One of India's largest problems is inadequate waste management, which causes several environmental and public health challenges. A large amount of plastic waste is burned in open-air, leading to the release of carcinogens. Indian metropolises, including Chennai, struggle to cope with the per day waste generated, due to municipal inadequacies and a general lack of awareness. Tamil Nadu is the third-highest generator of plastic waste.

A participatory model is devised to improve waste management, by enhancing awareness and capability sets to reduce waste at source. The proposed project will also provide the waste management industry with a sustainable, expandable, community-led, and locally-driven business model. To support the Swachh Bharat Mission through enhanced recycling methods, and balancing the generation and re-use of plastics.

The sustainable waste management strategy within this proposed model will be implemented in the Adyar and Cooum Riverine Regions (ADCRR) in Tamil Nadu and Swachh Bharat Adopted villages in the suburbs of the region. The target community will play a significant role in the development and execution of the suggested activities.

The four phases of the proposed project will begin with participatory assessments before implementation and enhancement of capacities through awareness generation, strategic development programs. This will be followed by the development of the participatory pilot model in collaboration with all stakeholders and dissemination of the results for replication to achieve large-scale impacts in waste management and the transition to the circular economy.

### Paromita Chakraborty

Dr Paromita Chakraborty is a professor and Head of the Center for Research in Environment, Sustainability Advocacy and Climate Change (REACH) at SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu.



### Girija K Bharat

Dr Girija Bharat is the Managing Director of Mu Gamma Consultants. She has a PhD in Chemistry and is a Presidential Scholar at George Mason University, USA. She is an Advisor to CSIR-NEERI, Govt of Orissa.

### Eirik H. Steindal

Eirik H. Steindal is a Sr Research Scientist at the Norwegian Institute for Water Research. He is a biologist by training and has been working in plastic and chemical pollution management.



## OMLAS 2023 – One Million leaders Asia Fellow - Nathaniel B Dkhar

Mr. Nathaniel B Dkhar of Mu Gamma has been selected as a Fellow for the prestigious One Million Leaders Asia program. This remarkable achievement fills us with immense pride, and we extend our heartfelt gratitude to Nelis Global for providing us with this incredible opportunity. Being accepted into the esteemed fellowship program is a true honour. The knowledge and experiences gained from the OMLAS program contributes to the growth and development of our communities and beyond.



**OMLAS Stars 2023 – Dr Kriti Akansha, Manisha Jain, and Anagha Krishnan of Mu Gamma** are shining bright with their exceptional talents and contributions. **Their dedication, expertise, and passion make them invaluable assets to the OMLAS team.** Kriti's strategic thinking, Manisha's attention to detail, and Anagha's creativity bring a unique blend of skills that propel the team's success. Together, they form a dynamic trio, inspiring others and making a remarkable impact on OMLAS and its endeavours.



## Jewel of LIT Award 2023

Dr Girija Bharat was honoured by her Alma mater, Laxminarayan Innovation Technological University, Nagpur with the prestigious 'Jewels of LIT Award' for her **outstanding contribution to the environment and sustainable development.** She was felicitated by the Hon'ble Dy Chief Minister of Maharashtra Shri Devendra Fadnavis on the December 16, 2023 in a grand ceremony at LITU, Nagpur during the Global Event Renaissance - 2023.



## National Startup Awards- Sustainability Champion-Finalist

Mu Gamma Consultants emerged as a finalist for the National Startup Awards, under the **Sustainability Champion** category. This award is given by the Department for Promotion of Industry and Internal Trade (DPIIT) of the Ministry of Commerce and Industry of Government of India. The Award ceremony was held on January 16, 2024, at Bharat Mandapam. This recognition underscores Mu Gamma's dedication to pioneering sustainable solutions in the ever-evolving business landscape. The award nomination not only signifies the company's exemplary efforts in promoting environmental responsibility but also positions them as a key player in driving the nation's economic growth through innovative and sustainable practices.

The startup ecosystem in India has witnessed a remarkable surge in cleantech enterprises, with over 6,600 startups spanning across 450 districts in 34 states. This extensive network reflects a growing awareness and commitment to fostering environmentally conscious initiatives. Against the backdrop of India's G20 presidency, the country has actively demonstrated its dedication to addressing climate change through robust policies and measures that encourage sustainability and innovation. Mu Gamma Consultants' nomination as a Sustainability Champion Finalist demonstrates how significantly their contributions have matched the country's vision for a greener and more sustainable future.



## States' Startup Ranking 2022 National Startup Awards 2023





## EVENTS AND NOTEWORTHY MEETINGS

### Launch of National Framework on Safe Reuse of Treated Water -January 5, 2023

The **National Policy Framework on Safe Reuse of Treated Water** was launched by the Hon'ble Minister of Jal Shakti **Shri Gajendra Singh Shekhawat**, in the presence of Chief Ministers of several States of India. It marked a significant milestone in water management and sustainability efforts. **This comprehensive framework, which is co-drafted by experts from Mu Gamma**, set out guidelines and best practices for the safe and efficient reuse of treated water across various sectors. With water scarcity becoming an increasingly pressing issue, the framework provides a crucial roadmap for harnessing the potential of treated water while ensuring public health and environmental protection. The launch of this framework signifies a proactive step towards a more sustainable and resilient future, where treated water can be utilized responsibly, reducing stress on freshwater resources, and promoting a circular economy approach to water management.



## Review and Update of National Implementation Plan (NIP) on Stockholm Convention on POPs-Inception Workshop February 13, 2023

The Ministry of Environment, Forest and Climate Change (MoEFCC) is the focal point of all UNEP-led international conventions, with Ministry of Chemicals and Petrochemicals, and Ministry of Agriculture and Farmers' Welfare as Designated Nodal Authorities (DNA) for Chemicals and pesticides, respectively. India is now updating the National Implementation Plan (NIP) for the implementation of its obligations under the Stockholm Convention. NIP update require expertise in inventorization, data collection, sampling and analysis, coordination with different Ministries/ Depts, CPCB/SPCBs, Customs Dept. etc. Often, it is challenging in developing countries due to lack of capacity, coordination and understanding between different ministries, non-availability of import/export data, apprehensions in data sharing etc. The work has been entrusted to the Stockholm Convention Regional Centre (SCRC) functioning in CSIR-National Environmental Engineering Research Institute (NEERI), Nagpur as lead Executing Agency and Central Pollution Control Board (CPCB), CSIR-National Institute of Interdisciplinary Science and Technology (NIIST), Trivandrum, and CSIR-Indian Institute of Toxicological Research (IITR), Lucknow. **Mu Gamma** was invited to review, guide, and provide policy direction to the project.



The INOPOL Team met Ms Supriya Sahu, IAS, Addl. Chief Secretary, Environment, Forest & Climate Change, Government of Tamil Nadu on the March 3, 2023 in her office. The team shared the Plastic Waste Management Strategy Report & Action Plan for management of POPs for Gujarat, developed under INOPOL-1 project. They discussed the convergence between INOPOL-2 with activities being undertaken by the Government of Tamil Nadu.





## Odisha Biotechnology Policy -May 9, 2023

The Science & Technology Department, Government of Odisha has formulated a new Biotechnology Policy 2023 for the development of Biotechnology in the State. Experts from

Mu Gamma were invited to the consultative workshop on the May 9, 2023 at the Convention Centre of the Loka Seva Bhavan, Bhubaneswar to deliberate on various aspects of policy seeking feedback and suggestions for enhancing and streamlining its implementation.



## Central Monitoring Committee (CMC) of National Green Tribunal (NGT)- May 12, 2023

Dr Girija Bharat gave a presentation to the Central Monitoring Committee (CMC) of the **National Green Tribunal (NGT) on the business models of safe reuse of treated water**, regarding the NMCG's efforts towards wholesome rejuvenation of Polluted River Stretches in the country. This meeting was held on May 12, 2023, which was attended by the Chief Secretaries of all the states. The Secretary of Ministry of Jal Shakti showed keen interest in the business models and was delighted to see the feasibility exercise.

This event was jointly organised by CSIR-NEERI and Global Silicones Council at the India Habitat Centre. The objective of the workshop was to develop an understanding of the best available tools/models for chemical risk assessment and application for chemical risk assessment, including delineation of key benefits, capabilities and gaps in such tools and models, in the Indian context. Dr Girija Bharat chaired one of the sessions and shared her thoughts about Indian and international policy frameworks on POPs, and the need for a risk-based approach to chemicals management.

## International Workshop on "Risk-Based Approach for Chemicals Assessment and Management"-May 22, 2023.

An International Workshop on **"Risk-Based Approach for Chemicals Assessment and Management"** was organized on May 22, 2023.



## INOPOL (Phase-II) Project Kick-off Workshop – June 9, 2023

The INOPOL project was kicked-off at SRM Institute of Science & Technology (SRMIST) campus at Kattankulathur, Tamil Nadu on the June 9, 2023. The welcome address was delivered by Dr. Marianne Olsen, Research Director, NIVA. Dr. Girija Bharat, Managing Director, Mu Gamma, provided an introduction of INOPOL Phase I, while Dr. Hans Nicolai Adam, Senior Research Scientist, NIVA, provided details on Phase II of the project. The Chief Guest of the event, Prof. Shishir Sinha, Director General, Central Institute for Petrochemicals Engineering and Technology – CIPET, provided a positive outlook about the potential value addition from plastic waste, and how opportunities associated with managing plastic waste can be instilled in young minds. Prof. Sinha also listed specific statistics regarding the challenges posed by plastic waste. Prof. Paromita Chakraborty, Head of the REACH Centre in SRMIST delivered a talk about how the project would bring deep insights on the chemical and plastic issues in River Cauvery in Tamil Nadu. Dr. Girija Bharat moderated the technical session, during which the partner institutions were invited to discuss their individual capacities for carrying out the project's components.



## Two-day Knowledge exchange visit to Chennai Metropolitan Water Supply & Sewerage Board (CMWSSB) -July 27-28 2023

Under the India-EU Water Partnership Action Phase 2, supported by NMCG and implemented by GIZ India, Mu Gamma team along with a team of officials from NMCG, Central Electricity Authority, SMCG UP, SPMG-UK, University of Applied Sciences and Arts Northwestern Switzerland (FHNW) and WASH Institute visited the 45 MLD Tertiary Treatment Reverse Osmosis (TTRO) plant in Koyambedu and the 10 MLD Tertiary Treatment Ultrafiltration (TTUF) plant at Nesapakkam. The purpose of the visit was to learn more about the potential of the tertiary treated sewage for reuse in industrial applications and indirect household consumption.





## World Water Week-Stockholm -August 24, 2023

The online panel discussion titled: **Women Leaders: leading innovations for change in the Water sector** was organized during the **Stockholm World Water Week** on 24th August 2023. This was organized by WICCI-WRC, which was supported by the UNDP-SIWI. The panel was laid out in 3 sections: Section 1 on, 'Women Leadership in Science & Technology', Section 2 on, 'Women Leadership in Social Innovation, Policy Advocacy, Stakeholder Participation', Section 3 on youth forum. Dr Girija Bharat was one of the

panellists of the event. The detail of the session is available in: <https://youtu.be/Of8kaxC0h8o?si=obgImfOYJQSbmKjZ>



## Field training and Capacity building program- September 16-19, 2023

On International Coastal Cleanup Day 2023 (September 16), a capacity-building workshop on 'Sampling of microplastics

and POPs at the Cauvery River' was organised by SRMIST and NIVA in Trichy. This on-site training was conducted for the officials of the Tamil Nadu Pollution Control Board (TNPCB) as well as the research scholars and team members of Mu Gamma, CIPET, and Toxics Link. The capacity building program was co-designed by Mu Gamma, SRMIST, NIVA, and CIPET.



## Mu Gamma at STE Conference- September 17, 2023

Dr. Girija Bharat, Managing Director, Mu Gamma, gave a plenary speech at the International Conference on Green Energy & Sustainable Environmental Technology (GESET-2023) held on the September 17, 2023. This conference was jointly organized by Save The Environment

(STE) and R K Goel Institute of Technology, Ghaziabad, India. The theme was **Montreal Protocol: fixing the ozone layer and reducing climate change**. During her plenary session, Dr. Girija focused on POPs management. She shared her valuable insights on the role of technology in promoting sustainability and underlined the significance of cross-sector collaboration.

## High level Convergence and Consultation meeting to Accelerate Hand Hygiene in Odisha- October 5, 2023

A high-level consultation meeting was convened by Ms Anu Garg (Development Commissioner and Additional Chief Secretary, Planning and Convergence Department, Government of Odisha) on October 5, 2023 at the Lok Seva Bhawan in Bhubaneswar to discuss the Actionable Hand Hygiene Roadmap of Odisha. Principal Secretaries and Secretaries of several Departments of the Government of Odisha attended the meeting. **The Roadmap was co-created with all relevant stakeholders and led by UNICEF to promote and sustain improved hand hygiene, incorporating practical steps for adapting to the new normal post-COVID.** Mr William Hanlon, Chief of Field Office, and Ms Shipra Saxena of UNICEF Odisha gave the opening

remarks. Dr Girija and Sanchita Ghosh (Consultant, MGC) presented the Roadmap with the situational analysis of hand hygiene in Odisha, actionable points, targets, milestones as well as targeted messages aimed at behaviour change. The UNICEF officials provided their valuable feedback for refining it further. Mary Abraham and Nathaniel B Dkhar of Mu Gamma conducted a series of stakeholder consultations and provided analysis for the Roadmap.



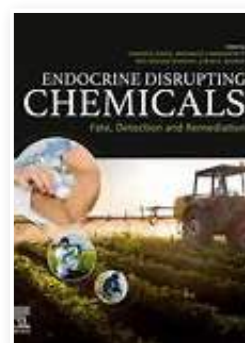
The INOPOL Team met Mr Rakesh Ranjan, IAS, Secretary, Ministry of Agriculture and Farmers Welfare, Government of India on November 22, 2023 in Krishi Bhawan, New Delhi. The team shared their expertise on agriculture plastic waste management, emerging contaminants in food, and offered their services to the Ministry of Agriculture.



# PUBLICATIONS

## Books

- **Managing Persistent Organic Pollutants in India: Case Studies on Vapi and Surat, Gujarat.** 1st ed. 2023. Cham: Springer Nature Switzerland, 2023. Web. This book is edited by Paromita Chakraborty, Luca Nizzetto, Girija Bharat, Eirik Hovland Steindal, and Satish Sinha. It is part of the Springer book series 'Emerging Contaminants and Associated Treatment Technologies (ECAT)'. This open access book focuses on the sources, fate, monitoring, regulation, management, best practices, and health impacts of POPs in Gujarat State, India. <https://doi.org/10.1007/978-3-031-31311-0>
- **Endocrine Disrupting Chemicals: Environmental Occurrence, Risk, and Remediation.** 1st ed. 2023. Elsevier Science. This book is edited by Paromita Chakraborty, Girija K. Bharat, Brij Mohan Sharma, and Pardeep Singh. This book provides both the practical and theoretical aspects of the origin and removal of endocrine-disrupting chemicals (EDCs). It provides a multi-barrier approach to managing EDCs that helps relevant stakeholders take preventive measures for the risks associated with EDCs in the environment (e.g., water, wastewater, soil, and other natural ecosystems). The book not only provides a technological solution for managing these emerging pollutants but also comprehensively treats the origin, fate, and mechanisms of EDCs.



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## INTERVIEWS



Dr Girija Bharat elucidates her vision and work around emerging contaminants and towards a cleaner environment in an interview with DD News Live (Tejaswini). Dr. Bharat discussed the innovative strategies and initiatives by her organization Mu Gamma towards reducing plastic and chemical waste. Her organization has been at the forefront of pioneering research and development as well as advocating for policy changes to limit plastic usage. <https://t.co/gKMvrQKtgy> Dr Girija spoke about the pervasiveness of EDCs and their detrimental effects on human health.

In an insightful podcast discussion with Dr. Saroj Pachauri (Director and Climate-Health Mentor, The POP Movement) on the deleterious health impacts of EDCs and PoPs, Dr Girija shared her thoughts on adopting a proactive stance in addressing the issue. Explore this episode for a deeper understanding. <https://youtu.be/6fsKh0xg9zY?feature=shared>

In a conversation with Dr. Mansee Bal Bhargava (National President, WICCI-Water Resources Council) on the episode of The Monday Munching/Musing with 'Women for Water', Dr Girija Bharat shared her experiential journey, thoughts and ideas on the role of women in water management. The Program provided insights and inspiration to young women and encouraged them to join water sector. <https://youtu.be/ZLnnlACf-pk?feature=shared>



## CONTACT US

Email id: [info@mugammaconsultants.com](mailto:info@mugammaconsultants.com)

