WORLD SUSTAINABLE DEVELOPMENT SUMMIT 2022

TOWARDS A RESILIENT PLANET:
ENSURING A SUSTAINABLE AND EQUITABLE FUTURE

February 16-18, 2022 (Virtual)

Norwegian Embassy

Reducing Plastic and Chemical Pollution in the Marine Environment

THEMATIC TRACK SUMMARY

Venue: Bhadra

Date: February 18, 2022

Time: 02:45 PM - 04:15 PM (IST)

Suggested Citation

World Sustainable Development Summit (2022), Reducing Plastic and Chemical Pollution in the Marine Environment, Thematic Track Summary (Rapporteur: Aparna Choudhary), New Delhi: The Energy and Resources Institute.

Actionable Messages

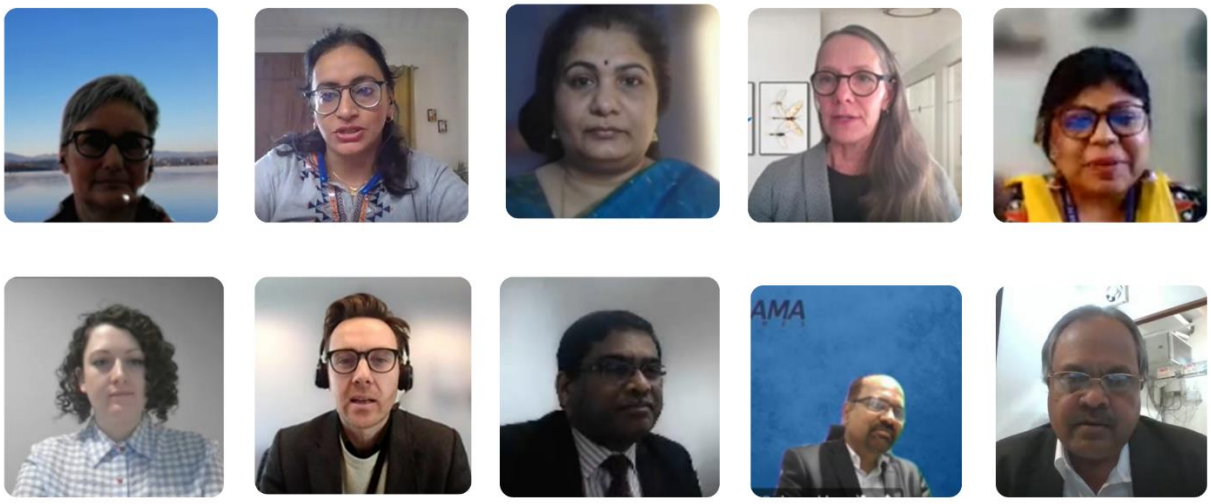
Message 1: There should be an open dialogue between all actors including scientists, government bodies, NGOs and policy makers.

Message 2: A national framework needs to be developed covering standards, eco-design, definition and recyclability of products.

Message 3: There is a need to have policy for plastic waste focusing on recycling along with instruments like green procurement and an action plan needs to be developed.

Message 4: Recycled plastic bottle has possibility of leaking at high temperature so its use need to be regulated.

Message 5: There are visible and invisible plastics and it is important to understand the implications of both. Toxicity and circularity are not compatible. Toxicity contaminates the whole material chain.



Narrative

The thematic session provided a valuable insight into the ongoing measures taken by various governments in various countries including India to curb the marine pollution due to indiscriminate dumping of plastics. It also emphasized the need for policy frameworks to bolster the prevention of plastic and chemical pollution of marine environment especially due to persistent organic pollutants (POP). The research challenges, findings and gap related to the area were highlighted which emphasized the need for further research work to achieve reduction of marine pollution at scale and speed. Moreover, a way forward was provided for the implementation of Stockholm Convention in India.

Dr Marianne Olsen, Research Director, Norwegian Institute of Water Research (NIVA) spoke about the challenges of marine litter which is recognized as one of the three largest global issues besides climate change and biodiversity loss. Biotic and abiotic matrices are affected by plastic pollution and river acts as a conveyor belt of pollution. The subject is in its infancy state as compared with the history of plastic pollution and there are huge knowledge gaps. There is lack of baseline/historic data, standardized methods/systems for analysis and understanding of effects and impact, knowledge on fate in the environment, socio-economic aspects and decision tools for mitigation. It is desired to integrate science with policy, and pollution and social effects are interlinked. Collaboration is the key to address the issue of marine pollution along with target setting and capacity building. Long term partnership is a crucial factor. There should be an open dialogue between all actors including scientists, government bodies, industry, NGOs and policy makers.

Mr Erlend Draget, Senior Advisor, Norwegian Ministry of Climate and Environment spoke about threat to human health and environment due to plastic pollution including the threat of unseen plastic such as microplastic and nanoplastic. The existing knowledge gap hinders action needed to manage plastic pollution effectively. There are more than 10,000 chemical substances out of which 2400 are identified as substance of potential concern and are not regulated. Plastic generation could double in a business as usual scenario and its leakage could triple in the future. She congratulated India for bringing out plastic regulation and comprehensive extended produce responsibility (EPR) guideline for plastics. UN environmental assembly will address plastic pollution very soon. Norway has developed a strategy to address plastic waste, the existing and new policy targets cover full life cycle of plastics for circularity. Norway has plastic waste on top agenda, and aims to guide circularity and provide financial assistance to low and middle income countries. Negotiations have started and the business community is also interested. Plastic wastes pose to be a transboundary environmental problem with global value chain, calling for a global action. The products that generate hazardous waste could be dis-incentivized. She lobbied for a need to have legally binding treaty to move to resource efficiency (RE) and prevent pollution. She hoped to work closely with Indian delegation and have a bilateral cooperation between Norway and India.

Dr Rajeshwara Rao, IAS Special Secretary, NITI Aayog, stated that NITI Aayog has started working with various ministries for plastic waste management. It is a challenge to address the subject in urban India having around 8000 urban towns. MoEFCC is working on the subject in rural and urban context. There is a lack of awareness about technology and knowledge instruments. International and national organizations should also be involved to further the knowledge required to manage plastic pollution. The third tier of government (urban local body) need to be involved with various stakeholders. Circular economy (CE) reports are ready for various sectors, groups have been created in the ministry involving stakeholders and only action plan is to be made. Workshops, discussions and knowledge instruments will help in cumulative manner to have benefit. India has joined clean seas campaign where plastic is the main focus.

Dr Girija K Bharat, Director, Mu Gamma Consultants Pvt. Ltd stated that plastic pollution has global ramification. In this regard, Norway is leading the way and India should have a system as many cities have done well but some are lagging behind. Inadequate waste management is the driver that is leading to rise in persistent organic pollutants (POPs). POPs are a class of hazardous chemicals that can bio-accumulate and bio-magnify in the environment. It is has a long range transportation potential. Open burning is a major issue which needs to be addressed.

Dr Rachel Hurley, Research Scientist at NIVA talked about the riverine release of plastics through several pathways. The river environment is variable/changeable and although the river seems to be simple and smooth like a pipeline but we cannot understand it fully. There are numerous sources of waste that vary across scales making it difficult to fully understand the fate of plastics. She emphasized on the need to switch off all sources of plastics into river otherwise cleanup efforts will be fruitless. Human analysis, along with camera and drone are used for studying plastic pollution to help in spatial and temporal analysis. The challenges include presence of plastics in deeper layer or high flow velocity of plastic load and great geographical diversity of river (upstream/downstream). An approach to such a challenge could be to physically intercept, categorize and weigh the plastics. Trash racks are not suitable for high

flow conditions and can get clogged and to overcome this harmonization is important. Another important issue is that not all plastic reaches river, plastics get stranded in vegetation and sediment bed across different time scales. In such a case, important plastics might get missed which may be important source of pollution. Validation and harmonizing method are used for spatio-temporal variability to define effective reduction strategy tailored to environment.

Dr Rachana Arora, Team Leader & Coordinator, GIZ mentioned working on preventing plastic pollution through EPR and use of digital platform to track, monitor and report leakages in the system. A national framework needs to be developed covering standards, eco design, definition and recyclability of products. The "address micro plastic through research" digital dashboard can be used to ensure compliance for single use plastic (SUP). Monitoring has an important role in case of producers, importers and brand owners (PIBO). There is a need to have policy for plastic waste focusing on recycling along with instruments like green procurement and action plan needs to be developed. There is need to have inclusive value chains by working closely with the recyclers. "With regard to SUP, a lot of public participation is required" for example, Tamil Nadu has banned single use plastic and recently emphasized on the need for traditional cloth bag which attracted public support. The role of urban local body is not very clear. There is need to develop sustainable value chain which could be address through EPR as well.

Dr Merete Grung, Research Scientist, NIVA stated that Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) are toxic to human health and difficult to manage due to limited ability to degrade. She talked about many international regulations which have come up with a limit for PFAS. For example, Europe has set a limit for PFAS in drinking water. As per research findings, perfluorooctane sulphonate (PFOS) was found in high concentration in the fish in lake Tyrifjord, Norway. The analysis of sediment sample revealed that there was high concentration of sum PFAS near factory, below detection limit near fire station and the upstream concentration was very low. There is a need to have legally binding documents, along with environmental monitoring and management for safeguarding environmental and human health.

Mr Suresh Padmanabhan, Strategy Advisor, Indorama Ventures Public Company Limited (IVL) talked about why polyethylene terephthalate (PET) bottles are preferred which include their reusability, low cost and low carbon footprint as proven by life cycle assessment (LCA). He talked about the commercial advantage of recycled materials which makes 100% of packaging materials reusable.

Dr Paromita Chakraborty, Associate Professor, SRM mentioned that pollution due to polybrominated diphenyl ethers need to be addressed. The informal sector is taking precious metals from plastic waste. The research findings for Tapi river and Daman Ganga river showed that industrial POP (i-POPs) levels along the industrial and open dump sites are comparable. The open dumps receive large amount of waste that remain for longer time. Although DDT is banned but pesticidal POP (p-POPs) showed increase due to use of DDT during pandemic. With respect to Stockholm convention, Dr Paromita stated that India has already enlisted 7 new POP and the research data will be crucial for the government with respect to the new POPs. Dr. Girija stated that a national implementation plan has been notified by India in 2018 but action plan is required for phasing out the new POPs.

Mr Satish Sinha, Associate Director, Toxics Link stated that it is critical to understand the implication visible and non-visible plastic. There is a need to understand the larger context to bring back plastic safely into circular economy. Dr. Suneel Pandey thanked all the participants.

Science plays a critical role in supporting the policy frameworks related to plastic waste management and prevention of marine pollution. Research work need to adopt holistic approach as there is no single method for analyzing characterization and quantification of plastics in water bodies. Research findings have a critical role in framing policies. Legally binding regulations and standards need to be developed for enabling recycling of plastics. Plastic waste and marine pollution is a global challenge requiring local, national and international collaboration.

Making Words Count @WSDS 2022

> There is a need for researchers, society and authorities to collaborate and address plastic pollution. River acts as a conveyor belt for pollution.
>
> ***Dr Marianne Olsen***
> ***Research Director, Norwegian Institute of Water Research (NIVA)***

> Plastics waste pose to be a "transboundary environmental problem with global value chain. While there is a lot that we still do not know, we now know enough to initiate action.
>
> ***Mr Erlend Draget***
> ***Senior Advisor, Department of Marine Environment & Pollution Control, Norwegian Ministry of Climate and Environment***

> NITI Aayog will be in the forefront to work all stakeholders. Authorities and communities have to take a leading role to manage plastic pollution.
>
> ***Dr Rajeshwara Rao***
> ***IAS Special Secretary, NITI Aayog, Government of India***

> No single method is capable of measuring total load of pollution. There is no international convention on plastic management defined.
>
> ***Dr Rachel Hurley***
> ***Research Scientist, NIVA***

> A lot of capacity building is required in terms of leakages and hotspot analysis. Circular economy solutions and a multi-pronged approach is required to manage macro and micro plastic pollution.
>
> ***Dr Rachana Arora***
> ***Team Leader & Coordinator, Circular Economy Solutions Preventing Marine Litter, GIZ***

> Environmental monitoring is important for discovering environmental hazard. Regulation and management are important for environmental and human health.
>
> ***Dr Merete Grung***
> ***Research Scientist, NIVA***

> We are in a very good direction, with respect to how research findings are supporting Stockholm convention in India. The pandemic has increased the plastic waste generation globally.
>
> ***Dr Paromita Chakraborty***
> ***Associate Professor, Department of Civil Engineering, SRM Institute of Science and Technology, SRMIST***

> Plastic is perceived to be benign but there are so many chemicals of concern. In this regard, most developed nations are finding hard to cope up.
>
> ***Mr Satish Sinha***
> ***Associate Director, Toxics Link***

> Polyethylene terephthalate (PET) bottles are preferred as a packaging material because of its low carbon footprint and low cost. Laws requiring recycling and better collection are to be framed.
>
> ***Mr Suresh Padmanabhan***
> ***Strategy Advisor, Indorama Ventures Public Company Limited (IVL)***