The major monitoring and scientific research initiatives on marine plastics and pollution: the experience of the G20 and other countries and its policy implications

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Osaka Blue Ocean Vision (2019)

- **G20 leaders agreed the Osaka Blue Ocean Vision as a common global vision**
- **They also called on other members of the international community to share this vision for protecting the world's oceans**

"We aim to reduce additional pollution by marine plastic litter to zero by 2050 through a comprehensive life-cycle approach that includes reducing the discharge of mismanaged plastic litter by improved waste management and innovative solutions while recognizing the important role of plastics for society."

UN Legally binding instrument for plastic pollution(2024?)

Direction of National Policy Response

1． Prevention：Product and service design for plastic-use reduction, introduction of alternatives to plastics

2． Waste Reduction：Increase in durability of products, including synthetic fiber products, tires, and paints using plastics. Washing and capture of micro-plastics before selling the products using synthetic fibers.

3． End of pipe: Introduction of filter, prevention of illegal dumping, clean-up, river management

4． Product regulation: Regulation of microbeads, single-use plastic products

5. Recycling: Harmonized technical standards for plastics, recycled plastics and plastic products, Guidelines on circularity in plastics use

But! Need to be super ambitious!

OECD Global Plastic Outlook (2022)

- OECD countries needs to be very ambitious in terms of restraining plastics demand and enhancing circularity.
- Co-ordinated and ambitious global efforts can almost eliminate plastic pollution by 2060.
- The economic consequences of the policy packages will be modest at the global level.
- Developing economies will face higher costs than the global average. Role of ODA/technology transfer/investment to infrastructure will be increased.

Overview of this presentation

- This presentation is a quick overview of monitoring and scientific research on marine plastics and pollution.
- The whole information is based on “G20 Report on Actions Against Marine Plastic Litter” 2019, 2020, 2021, and 2022.
- This report is contributed not only by G20 countries but by partners of G20 Osaka Blue Ocean Vision (Total around 46 countries and 8 organizations)
- Along with Ministry of the Environment of Japan, IGES is an editor of the report since 2019.

National Monitoring Programs

- Quick review of national programs reported under “Monitoring & Scientific research on marine plastic litter”

	Waste-centric	Water-way centric(river and sewage)	Costal and ocean centric	Plastic-product centric
Number of programs associated with different leakage points	**8**	5	**15** **(Monitoring of marine litter, coastal litter, microplastics in surface water)**	1

Development and Harmonization of National Monitoring Method Protocol

	National monitoring method/protocol development
Number of programs associated with different leakage points	**6** **(Mostly G20 countries)**

Science Programs

- More reports from emerging and developing economies compared to national monitoring programs.
- For example, Iran reported their scientific works on surface-ocean plastics in Northern Persian Gulf as well as Caspian Sea.
- Plastic material flow work is crucial for monitoring but limited number of countries seems to associate their on-going scientific work on MFA with monitoring.

	Marine Debris	Surface-ocean plastics	Microplastics	Plastic material flow	Environmental impacts	Materials
Number of responses as existing science programs	**9**	3	4	4	**5**	2

Policy Implications

- It seems that the current policy attentions is still more on monitoring of direct plastic litter and environmental impacts.
- Upstream (product and material-related) monitoring and downstream monitoring (water-way, waste, and marine and coastal environment) are not integrated well.
- Top-down assessment/estimation based on life-cycle approaches and material flow assessments are available but may not been widely used for policy assessment and decision making.
- Capacity development on utilizing indirect methodologies and life-cycle approaches/material flow assessments for policy purposes is necessary.
- At least at policy makers level, utilization of DX or AI is not widely recognized as promising methodologies yet for monitoring purposes.