



Marine Plastic Pollution: Current State and Countermeasures

February 6, 2023

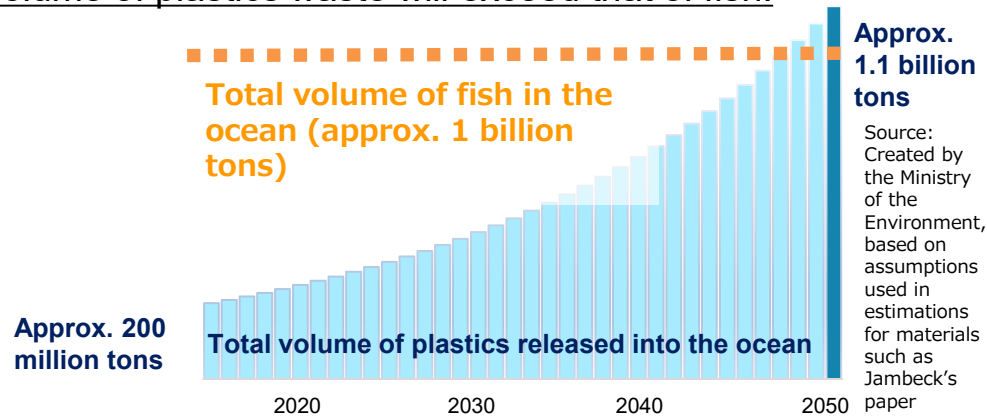
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Marine Plastic Pollution Generation Conditions

Increasing runoff of plastics waste into oceans

If plastics waste runoff into the ocean continues at the current pace, calculations estimate that by 2050, the total volume of plastics waste will exceed that of fish.



[Based on assumptions used in estimations for materials such as Jambeck's paper]

- Assuming plastics manufacturing volume increases by 5% every year
- Assuming approximately 3% of manufactured plastics (322 million tons in 2015) end up flowing into the ocean

Global countermeasures are urgently needed.

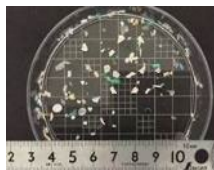


Damages and Impacts of Marine Plastic Pollution

- Impact on the marine environment, including ecosystems
- Hindrance to ship voyages
- Impacts on sightseeing and the fishing industry
- Impacts on coastal living environments
 - There are also concerns about the impact which maritime microplastics (plastic particles smaller than 5 mm) could have on ecosystems.



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Provided by the Isobe Laboratory, Kyushu University

Environmental Plastics Emissions Estimates

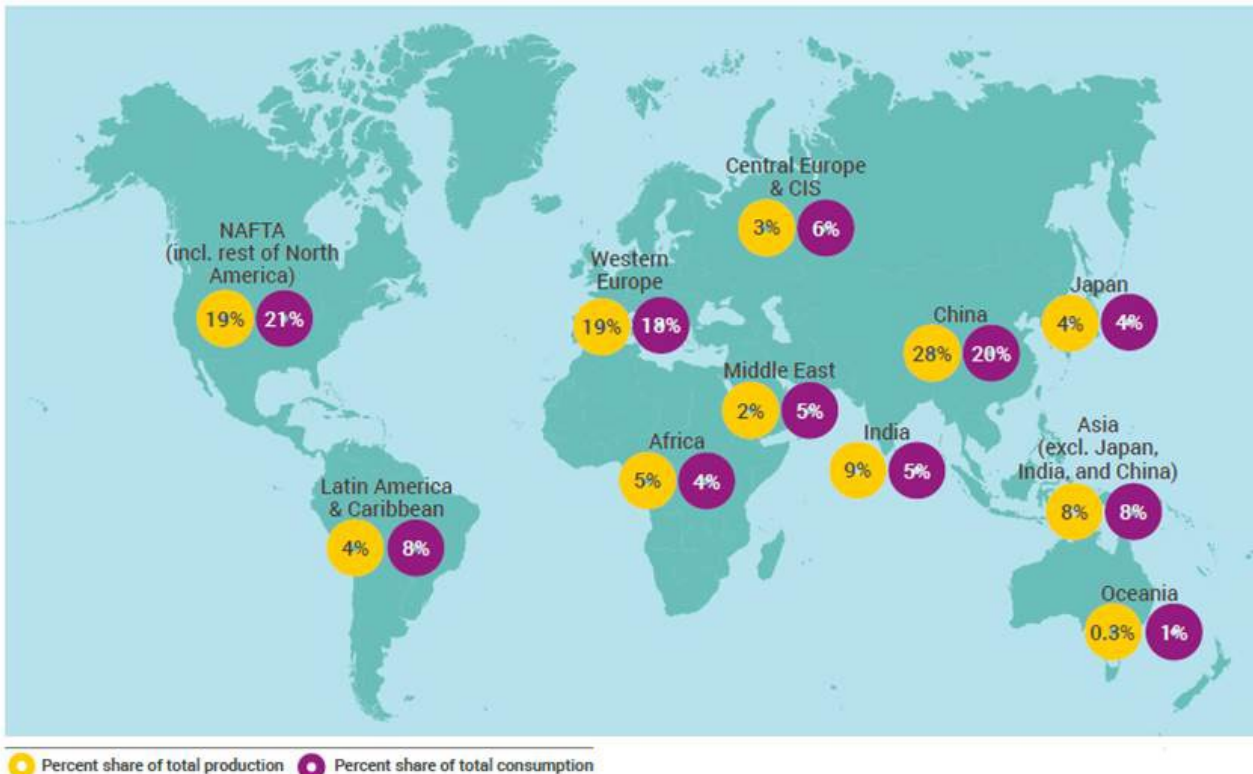
The United Nations Environment Programme (UNEP) has calculated the total emissions volume of 23 types of plastics (both macro and micro) **worldwide** (with 2015 as a base) in various life cycle stages, with an approximate estimate of **8.28 million tons**.

UNEP (2018) "Mapping of global plastics value chain and plastics losses to the environment"

Emission sources	Volume (units: 10,000 tons)	Ratio (%)
Total plastics waste	828	100.0%
Total macroplastics emission volume	527	63.6%
Inappropriate waste management	387	46.7%
Litter	80	9.7%
Fishing gear	60	7.2%
Total microplastics emission volume	301	36.4%
Cosmetics and personal care items	1	0.2%
Tire wear	141	17.1%
Marine coatings	5	0.5%
Textile washing	26	3.2%
Road markings	59	7.1%
Urban dust	65	7.9%
Pellet manufacturing	3	0.4%

Global Plastics Production and Consumption

- According to the United Nations Environment Programme (UNEP) report, 3.88 million tons of plastics are produced worldwide per year (as of 2015).
- Percent share of total production and consumption for each country and region is shown below.
 - By individual country, **China's ratio was the largest** (production: 28%, consumption: 20%), **followed by North America and Western Europe** (approximately 20% each).
 - Japan's production and consumption were each around 4% of the total.
 - **Asia** (China, India, Japan, the Middle Asia, etc.) **had the largest emissions volume of any single region in both categories** (production: 51%, consumption: 42%).



Yellow: Percent share of total production
Purple: Percent share of total consumption

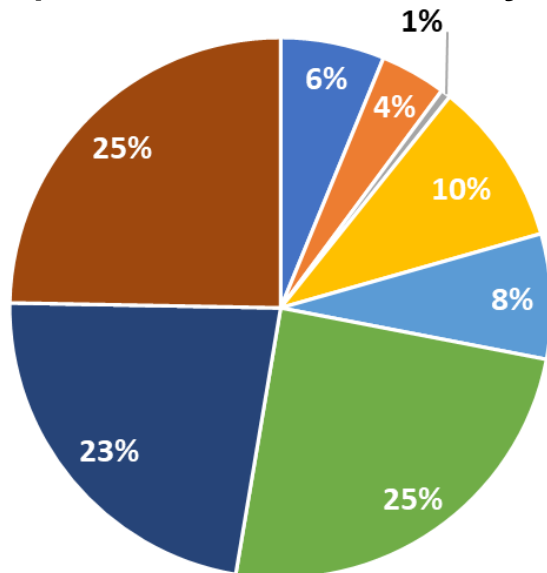
Plastics Environmental Emissions

Macroplastics emitted into the environment (water and land) in 2019

Macroplastics: Approx. 19.4 million tons (reference: microplastics: approx. 2.7 million tons, total: approx. 22 million tons)

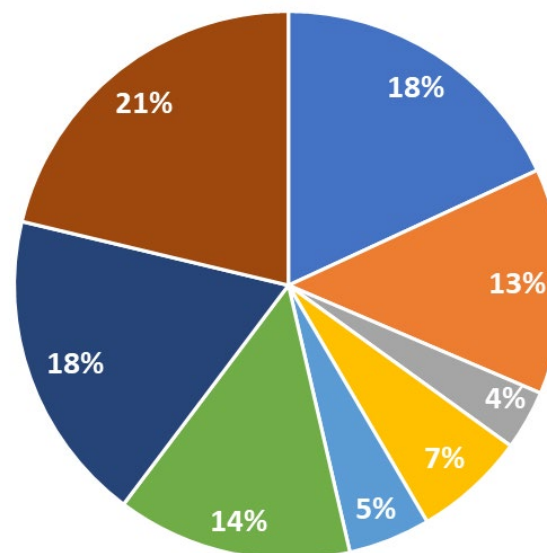
- Asia was the main emissions region (approx. 50% of the total), followed by the Middle East and Africa. Developed countries accounted for around 10% of the total.
- In addition, around 40% of microplastics emissions were in Asia (18% China, 21% other Asian countries). The next largest emitters were OECD American states (18%) and European states (13%).

Macroplastics Emission Ratios by Region



Microplastics Emission Ratios by Region

2019



■ US, Mexico, Canada, etc. (OECD American states)

■ EU, Norway, Switzerland, UK, etc. (OECD European states)

■ Japan, Korea, Australia, NZ (OECD Oceania states)

■ Brazil, Caribbean islands, etc. (countries not part of the OECD American states)

■ Russia and other countries not part of the EU Eastern Europe

■ Middle East, African countries, etc.

■ China

■ Other Asian countries

Source: OECD Global Plastic Outlook (2022) Figure 2.10

G20 Osaka Blue Ocean Vision and Implementation Framework

Since the majority of emissions are said to originate from emerging and developing countries, global initiatives are needed which include these countries.

→At G20, the “Osaka Blue Ocean Vision” and “G20 Implementation Framework for Actions on Marine Litter” were shared.



Source: Ministry of Foreign Affairs

Osaka Blue Ocean Vision

- G20 leaders **shared a common global vision.**
- There were also calls for sharing this vision with other countries and international organizations. (Shared with a total of **87 countries and regions** as of February 2022.)

“With awareness for the important role which plastics play in society, we will use a comprehensive life cycle approach, including the use of improved waste management and innovative solutions to reduce plastics waste emissions caused by incorrect management practices, **aiming to reduce additional plastics waste pollution into the oceans to zero by 2050.**”

G20 Implementation Framework for Actions on Marine Litter

- Selection at ministerial meetings related to energy conversion for G20 sustainable growth and the global environment

- (1) Through the following **implementation of voluntary efforts** and **sharing and updating of effective countermeasures** G20 countries **learn from each other.**
 - 1) Appropriate waste management, 2) marine plastic waste collection,
 - 3) expansion of groundbreaking countermeasures (innovation), 4) international cooperation for enhancement of each country’s capabilities, etc.
- (2) G20 countries cooperate on 1) promoting international cooperation, 2) promoting innovation, 3) sharing scientific knowledge, and 4) implementing initiatives for involving various stakeholders, raising awareness, and expanding outside of the G20 countries.

- The leaders of the G20 countries agreed to the above.

“We will continue to support the “G20 Implementation Framework for Actions on Marine Litter.”

Treaty Negotiations Related to Plastics Pollution

- In March 2022, the United Nations Environment Assembly (UNEA) passed a resolution to [establish an Intergovernmental Negotiating Committee \(INC\)](#) in preparation for drafting an international document (treaty). The organization is aiming to [complete the preparations by the end of 2024](#).
- From November 28 to December 2, 2022, [the first meeting of the Intergovernmental Negotiating Committee \(INC1\) was held](#) in Punta del Este, Uruguay.

INC1 Results Overview

- Over 2,300 people participated from approximately 150 countries (including both private companies and NGOs)
 - A chairman (former foreign minister of Peru) was selected, [and negotiations were officially started](#).
 - [Hiroshi Ono, Vice-Minister for Global Environmental Affairs, Ministry of the Environment, was named as a director candidate for Asia-Pacific regional representatives](#), and he collected statements from representatives of the region, making efforts to promote involvement of each country. His appointment as director is expected at the next meeting.
 - Comments from each country and region clarified the approach to treaty drafting and future points for discussion.
- (Generally speaking, all parties agreed with the following.)**
- The purpose of the treaty should be protection of human health, biodiversity, and the environment.
 - **Global shared goal-setting** is essential.
 - Achieving transparency in each country's initiatives through **country-specific action plan drafting, reporting, and evaluation** frameworks is important.
 - Initiatives covering the full life cycle of plastics from manufacturing to disposal are important.
 - Accumulation and sharing of scientific knowledge is important.

(Future points for discussion)

- For initiatives in the manufacturing stages of the plastics life cycle, should there be global universal standards or country-specific standards?
- What is the ideal form and scope for support in the areas of capability, technology, and funding? (Developing countries felt especially strongly that developed countries should bear a larger burden.)



Source: Ministry of the Environment

Future Schedule

March 2022	United Nations Environment Assembly: Resolution to establish an Intergovernmental Negotiating Committee (INC) (Aiming to complete treaty drafting by the end of 2024.)
November 28 - December 2, 2022	First negotiation meeting in Uruguay: INC chairman selection, determination of main negotiation agenda for treaty
May 22 - May 26, 2023	Second negotiation meeting in France: Discussion of treaty draft elements
November 13 - November 17, 2023	Third negotiation meeting in Kenya: TBD
February 26 - March 1, 2024	United Nations Environment Assembly: INC status report
April 2024	Fourth negotiation meeting in Canada: TBD
October/November 2024	Fifth negotiation meeting in Korea: TBD
2025 and later	Diplomatic conference (location TBD): Adoption of treaty, start of signing process by each country



Asia-Pacific regional meetings (held almost every day during INC1)

Source: Ministry of the Environment



Gustavo Meza-Cuadra
INC Chairman

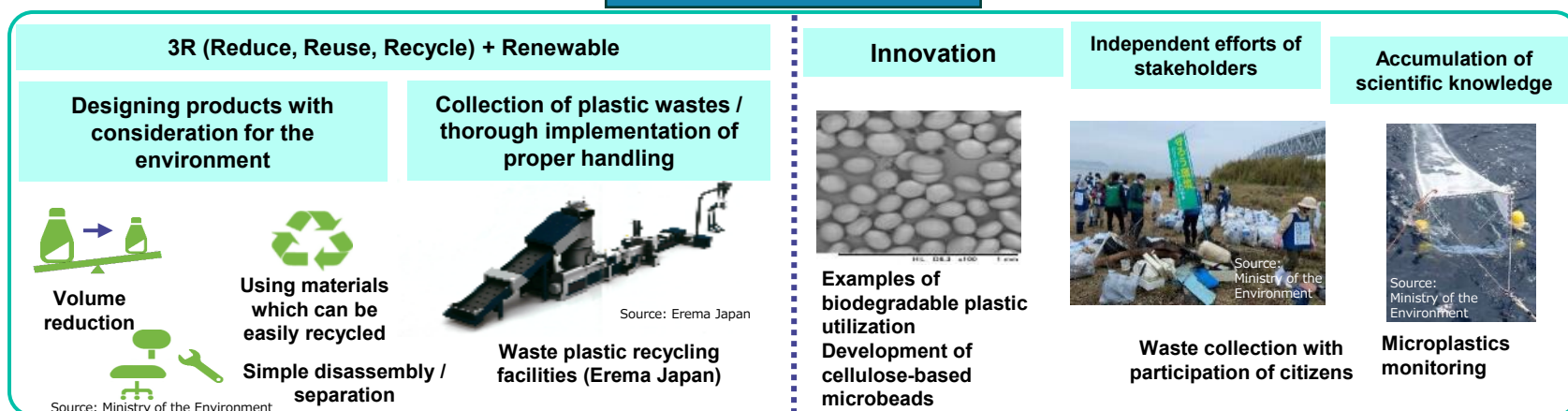
Hiroshi Ono
Asia-Pacific
Region Representative/
INC Director candidate
Vice-Minister for Global
Environmental Affairs

Source: Ministry of the Environment

Domestic implementation

- In May 2019, the “**National Action Plan for Marine Plastic Litter**” was established, the **basic policy based on the Marine Litter Act** was revised, and the “**Resource Circulation Strategy for Plastics**” was established.
- In May 2022, the “**Act on Promotion of Resource Circulation for Plastics**” was enacted.

Life Cycle Approach



International handling

- Established the MARINE Initiative for the achievement of the Osaka Blue Ocean Vision and announced support for capability development and infrastructure creation, including training of waste management personnel in developing countries (aiming for 10,000 personnel by 2025).
- **Supporting the determination of country-specific action plans**, with a focus on ASEAN countries.
- **Enhanced marine waste monitoring capabilities**, including the introduction of harmonized methods, and **accumulated scientific findings** such as distribution of marine waste.
- Developed cooperative relationship through bilateral **policy discussions** with minister-level government officials.
- Established the “Regional Knowledge Center for Marine Plastic Debris” under the **Economic Research Institute for ASEAN and East Asia (ERIA)**.