HIGH LEVEL PANEL *for*
A SUSTAINABLE
OCEAN ECONOMY

Plastic as a Key to Addressing Ocean Pollution

3 June 2020 | Webinar

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HIGH LEVEL PANEL *for*
A SUSTAINABLE
OCEAN ECONOMY

High Level Panel for a Sustainable Ocean Economy

A unique initiative by 14 world leaders committed to:

Catalysing bold, pragmatic ocean solutions in governance, technology and finance.

Creating a new relationship between humanity & ocean allowing us to Protect, Produce and Prosper.

Supporting the Sustainable Development Goals (SDGs) for a better future.

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High Level Panel for a Sustainable Ocean Economy

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UN SG's Special Envoy for the Ocean

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Prime Minister of Canada

Norway

Erna Solberg
Prime Minister of Norway

Portugal

António Costa
Prime Minister of Portugal

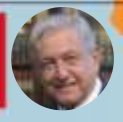
Japan

Shinzō Abe
Prime Minister of Japan

Jamaica

Andrew Holness
Prime Minister of Jamaica

Mexico



Andrés López Obrador
President of Mexico

Ghana

Nana Akufo-Addo
President of Ghana

Kenya

Uhuru Kenyatta
President of Kenya

Indonesia

Joko Widodo
President of Indonesia

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Namibia

Hage Gottfried Geingob
President of Namibia

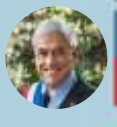
Fiji

Frank Bainimarama
Prime Minister of Fiji

Australia

Scott Morrison
Prime Minister of Australia

Chile



Sebastián Piñera
President of Chile

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Plastic as a Key to Addressing Ocean Pollution, May 2020

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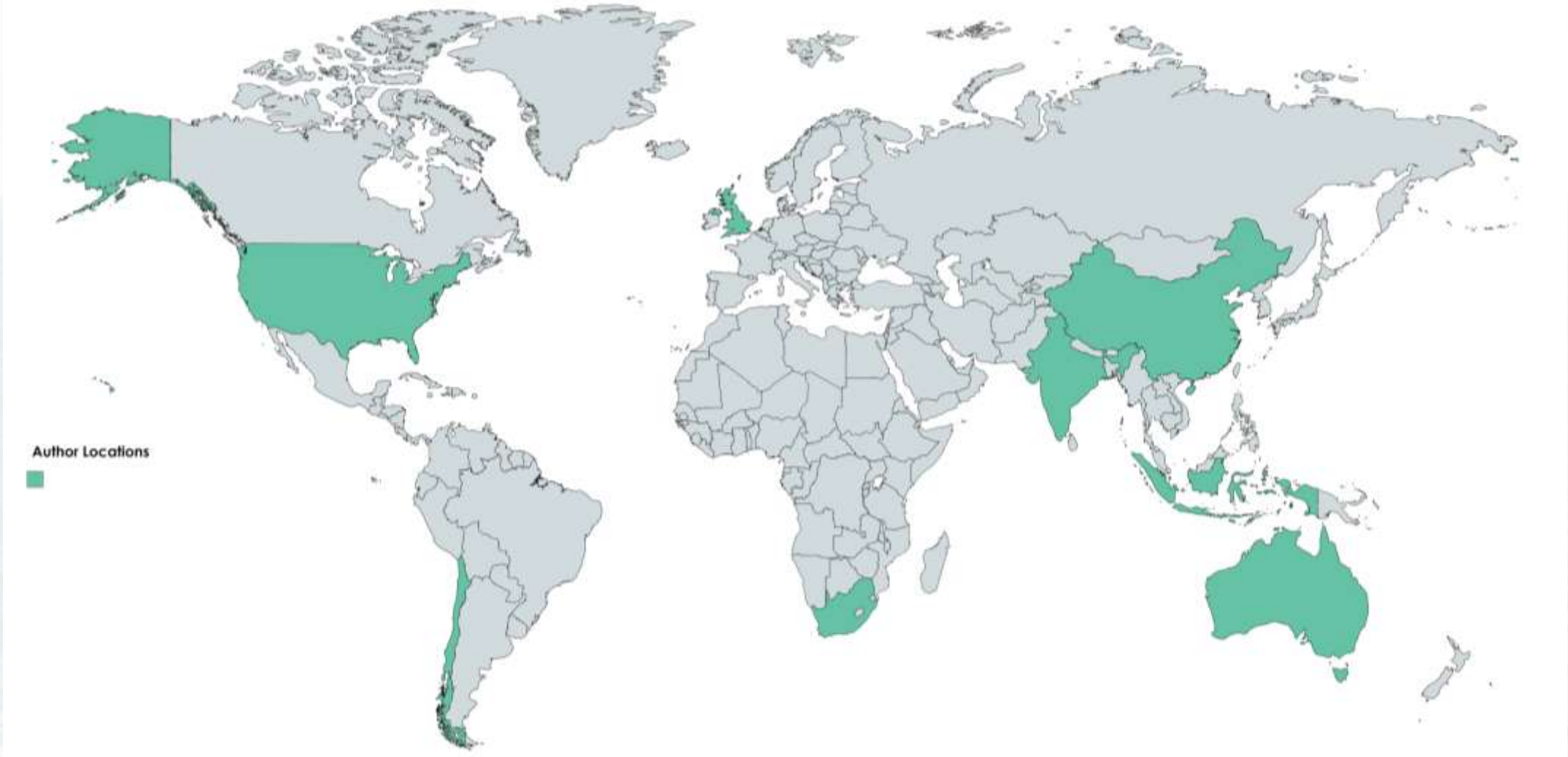
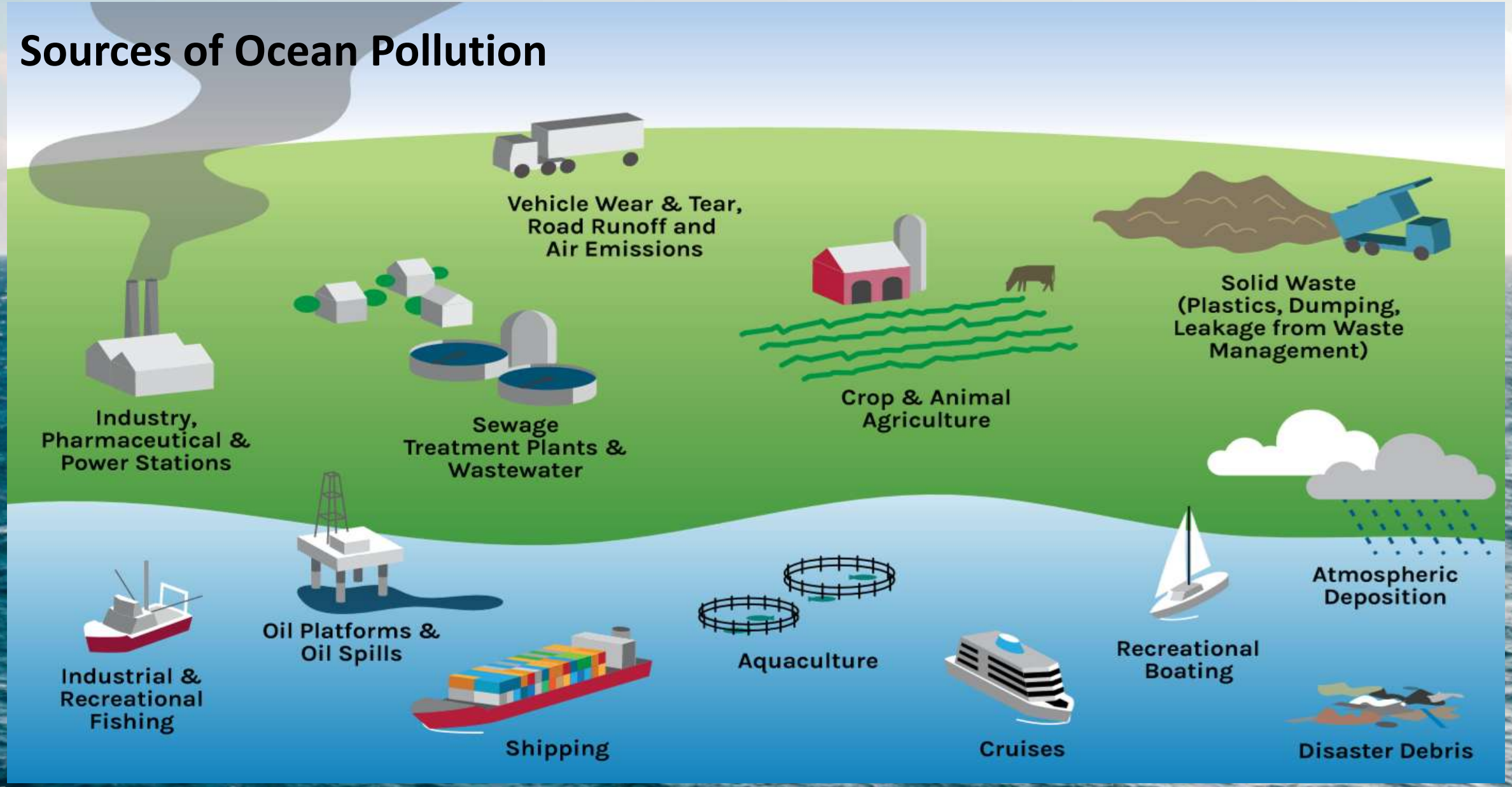
Global Representation/Perspective of Authors



Sources of Ocean Pollution



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Plastic as a Key to Addressing Ocean Pollution, May 2020

Key Numbers

5-13 million metric tons of plastic go into the ocean each year = one dump truck of plastic/minute

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1.9 million microplastics per square meter on the ocean floor

Sectors

- Municipal

(coastal or near rivers)

- Agricultural and Aquacultural
- Industrial
- Maritime

Image Credits: Jenna Jambeck

Pollutants

- Microplastics (<5 millimetres [mm])
- Macroplastics (>5 mm)
- Other solid waste
- Pesticides
- Nutrients (Nitrogen, Phosphorus)
- Antibiotics, parasiticides, other pharmaceuticals
- Heavy metals
- Industrial chemicals and persistent organic pollutants
- Oil and gas

Image Credit: Jenna Jambeck

Impacts

Ocean

- Species' ingestion of and entanglement in plastic
- Transport of chemicals and invasive species from plastic
- "Ghost" fishing
- Eutrophication and hypoxia
- Biomagnification of chemicals

Health

- Reproductive, developmental, neurologic, endocrine and immunologic adverse health effects from chemicals
- Acute or chronic toxicity
- Increased exposure to pathogens and mosquito-borne diseases

Economy

- Impaired productivity of fisheries
- Loss of seafood supply from contamination
- Lost value of resources wasted rather than used in circular economy
- Reduced tourism and recreation in costal areas

Solutions to Stop Ocean Pollutants and Plastics

1. Improve wastewater treatment
2. Improve stormwater management
3. Adopt green chemistry practices and new materials
4. Practice radical resource efficiency
5. Recover and recycle
6. Improve coastal zones
7. Build local systems for safe food and water

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Plastic as a Key to Addressing Ocean Pollution, May 2020

Summary of Interventions and Pollutants Addressed across Sectors and SDGs

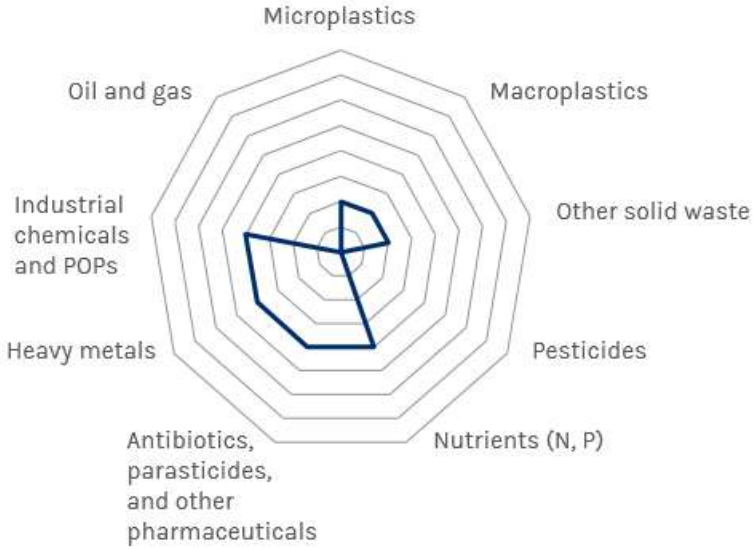
	(1) IMPROVE WASTEWATER MANAGEMENT	(2) IMPROVE STORMWATER MANAGEMENT	(3) ADOPT GREEN CHEMISTRY PRACTICES AND NEW MATERIALS	(4) PRACTICE RADICAL RESOURCE EFFICIENCY	(5) RECOVER AND RECYCLE	(6) IMPROVE COASTAL ZONES	(7) BUILD LOCAL SYSTEMS FOR SAFE FOOD AND WATER
SDGS	6.2, 6.3	NONE	3.9, 12.4	8.3, 8.8, 11.6, 12.2, 12.5	8.3, 8.8, 11.6, 12.2, 12.5	NONE	6.1, 6.B, 2.1, 2.3
Microplastics	M	M	M, A	M, A, I, Mar	M, A, I, Mar	M, Mar	M, A
Macroplastics	M	M	M, A, Mar	M, A, I, Mar	M, A, Mar	M, Mar	M, A
Other solid waste	M	M		M	M, A, Mar	M, Mar	M, A
Pesticides		A	M, A	M, A			A
Nutrients (N, P)	M, A	A		M, A	M, A	A	M, A
Antibiotics, parasiticides, other pharma-ceuticals	M, I	A				A	A
Heavy metals	M, I	M, A, I	M, A, I, Mar			A, I, Mar	A
Industrial chemicals and POPs	M, I	M, A	M, A, I, Mar		I	I	
Oil and gas		M, A, I		I, Mar	I	M, I, Mar	

Note: Sectors are municipal (M), agricultural (A), industrial (I), maritime (Mar) Bold sectors are the primary scope of influence, non-bold are secondary; cells are shaded progressively darker as more sectors are impacted.

Source: Authors.

Opportunities for Action

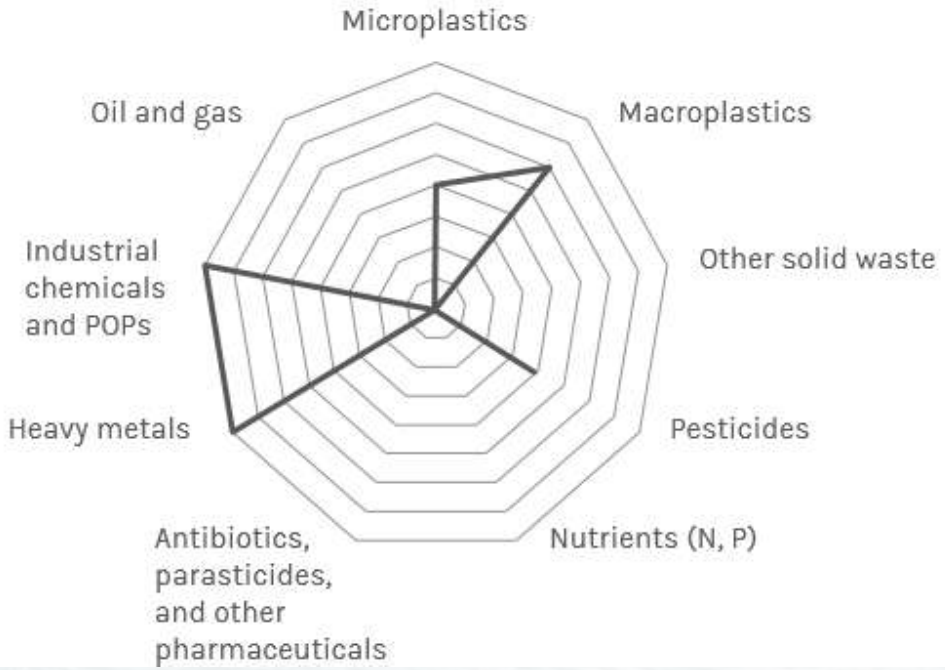
IMPROVE WASTEWATER MANAGEMENT			
INFRASTRUCTURE	**POLICY**	**MINDSET**	**INNOVATION**
i. Create or expand wastewater treatment capacity (M) ii. Add tertiary treatment for nutrients and microplastics (M) iii. Install toilets (wet or dry) where needed to prevent open defecation (M) iv. Install septic tanks where access to municipal wastewater systems is limited (M) v. Ensure industrial wastewater is appropriately treated, whether through municipal or other infrastructure (I)	i. Ensure supporting policies for wastewater improvements and sustainability of infrastructure over time are in place (M)	i. See wastewater as a natural resource, especially in water-constrained regions (M)	ii. Develop washing machine filters for microplastic fibres (M) iii. Innovate ways to remove pharmaceuticals and antibiotics from wastewater effectively and affordably (M)



Sectors: Municipal (M), industrial (I)
Pollutants: Macroplastics; microplastics; other solid waste; nutrients; antibiotics, parasiticides and other pharmaceuticals; heavy metals; and industrial chemicals and POPs
SDGs: 6.2, 6.3

Opportunities for Action

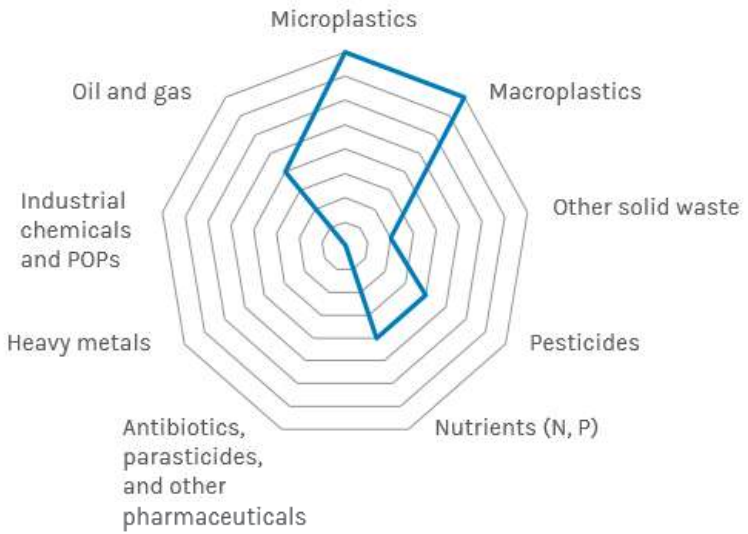
ADOPT GREEN CHEMISTRY PRACTICES AND NEW MATERIALS			
INFRASTRUCTURE	**POLICY**	**MINDSET**	**INNOVATION**
i. Construct treatment facilities with 'green engineering' principles (M)	i. Ban or limit the use of chemicals of concern and hazardous materials (I)	i. Adopt green chemistry principles as a practice for companies (I)	i. Develop new materials that maintain the desirable performance characteristics of plastics but not the problematic ones, e.g. true biodegradables (M, A)
ii. Develop infrastructure for the production of new or alternative materials	ii. Ban hard-to-manage materials (M)	ii. Change cultural norms around having manicured lawns to reduce the use of pesticides, herbicides and fertilisers used for residential and commercial landscaping (M)	ii. Develop alternative cleaning products, e.g. phosphate-free soap and detergents (M)
	iii. Require tracking/ manifest of chemicals of concern (I)		iii. Use fish waste or seaweed to make biopolymers for fishing gear (A)
			iv. Support research and development in green chemistry and alternative chemicals (I)
			v. Reduce and prevent tire wear and tire dust by using new materials or other mechanisms
			vi. Use new materials for fishing gear, e.g. biodegradable components (Mar)
			vii. Support the development of products and services that do not use any chemicals of concern (I)



Sectors: Municipal (M), agricultural (A), industrial (I), maritime (Mar)
Pollutants: Macroplastics; microplastics; other solid waste; pesticides; heavy metals; industrial chemicals and POPs
SDGs: 3.9, 12.4

Opportunities for Action

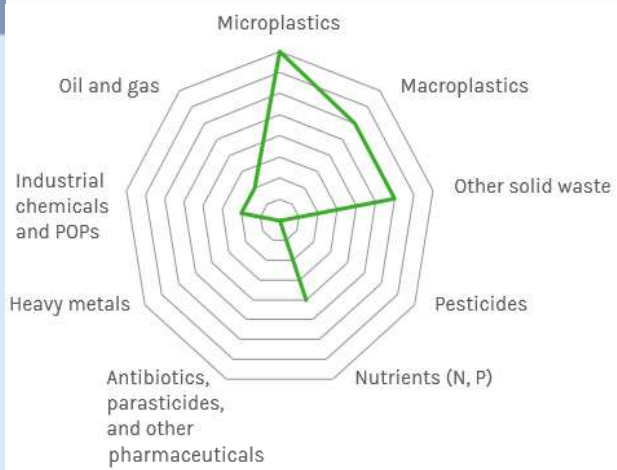
PRACTICE RADICAL RESOURCE EFFICIENCY			
INFRASTRUCTURE	**POLICY**	**MINDSET**	**INNOVATION**
i. Enable the development of circular business models through shared infrastructure, for example, reverse logistics or commercial washing services for reusable foodservice items (M)	i. Impose fees on single-use or other high leakage items (M) ii. Encourage industry voluntary contributions to reduce fossil-fuel-based plastics (M, A, I, Mar) iii. Support policies that allow personal container use in shopping and dining (M) iv. Enable treatment and use of food and human waste in appropriate applications (M, A)	i. Change cultural norms around waste generation/consumption and reuse, in particular to reduce the use of single-use plastic items (M)	i. Design zero-packaging grocery stores or include 'packaging free' or 'plastic free' aisles in regular grocery stores (M) ii. Develop new purchasing models that end reliance on single-use plastics (e.g. packaging as a service, reuse models) (M) iii. Pricing structure/business model for nutrients and pesticides to optimise outcomes and minimise waste (M) iv. Require fishing gear tracking (Mar)



Sectors: Municipal (M), agricultural (A)
Pollutants: Macroplastics; microplastics; other solid waste; pesticides; nutrients
SDGs: 8.4, 12.2, 12.5

Opportunities for Action

RECOVER AND RECYCLE THE MATERIALS WE USE (FORMAL AND INFORMAL SECTORS)			
INFRASTRUCTURE	**POLICY**	**MINDSET**	**INNOVATION**
i. Implement systems for compliance with bale contamination standards in exported/ imported waste (M)	i. Implement extended producer responsibility laws (M)	i. Change cultural norms around proper sorting and recycling (M)	i. Invest in tracking technology to combat illegal dumping (M)
ii. Deploy technology for advanced waste drop-off facilities (M)	ii. Provide incentives for waste segregation and recycling (M)	ii. Expand home composting (M)	ii. Develop and scale on-demand waste collection (M)
iii. Use materials that are recyclable and retain value (M)	iii. Strengthen markets for recycled plastics (e.g. mandate use, secure demand, create price premiums) (M)	iii. Promote and expand commercial composting infrastructure (M)	
iv. Improve technology used at recycling facilities (M)	iv. Implement Fishing for Litter programmes (Mar)		
v. Use equipment and processes to recover and recycle chemicals and materials (I)			



Sectors: Municipal (M), agricultural (A), industrial (I)
Pollutants: Macroplastics; microplastics; other solid waste; nutrients; industrial chemicals and POPs
SDGs: 8.3, 8.8, 11.6, 12.2, 12.5

Find Out More and Read the Full Paper

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