

D. Science for Policy and Action

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A. Background: Science for Policy and Action

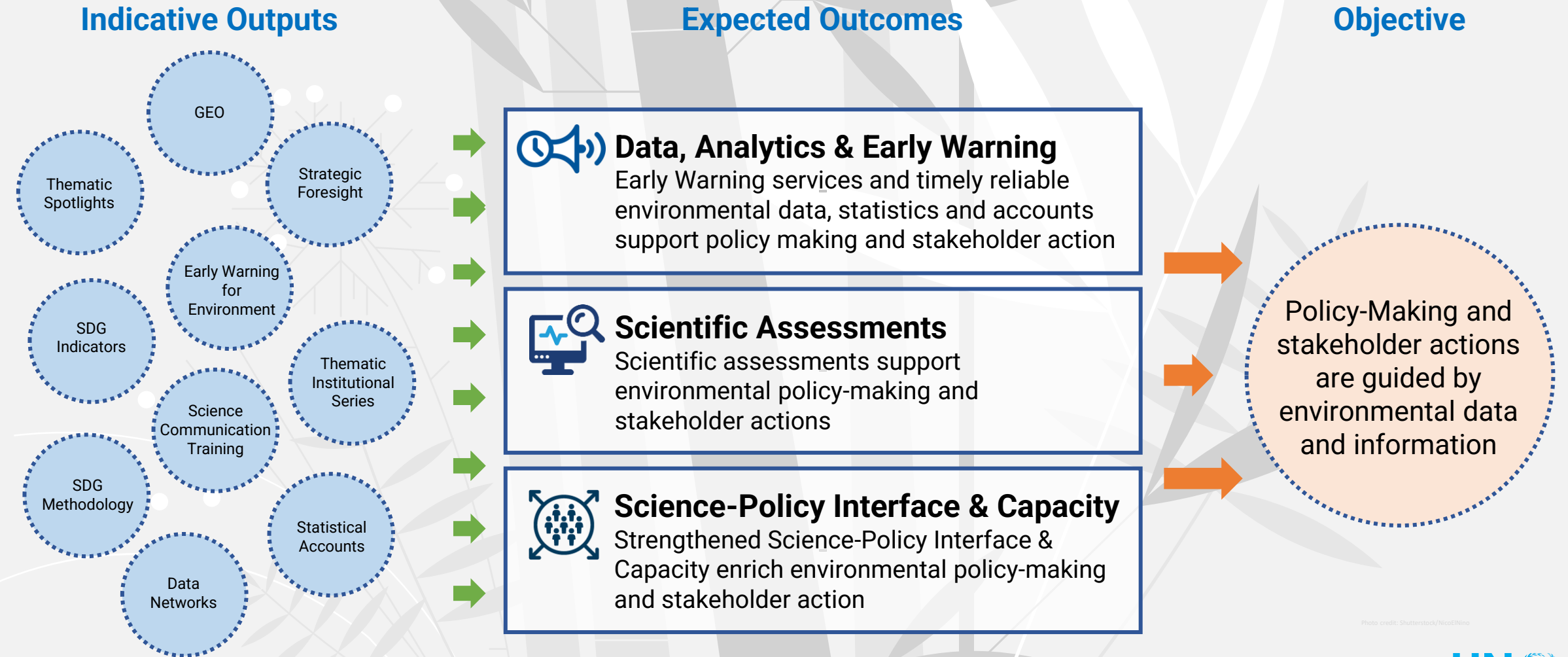


Photo credit: Shutterstock/NicoElNino

B. Results: Science for Policy and Action

Support to Climate Stability

Emission Gap Reports



A total of 14 reports produced since 2010

Adaptation Gap Reports



A total of 8 reports produced since 2014

B. Results: Science for Policy and Action

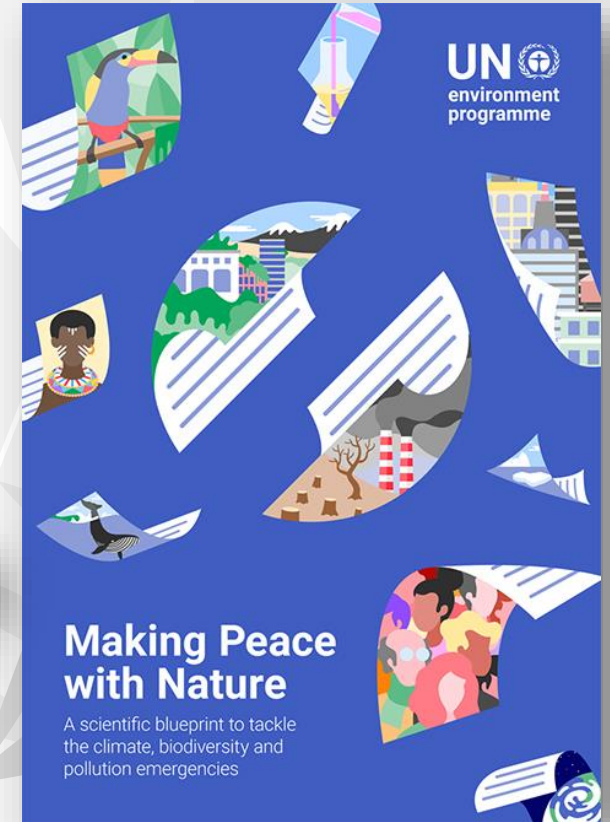
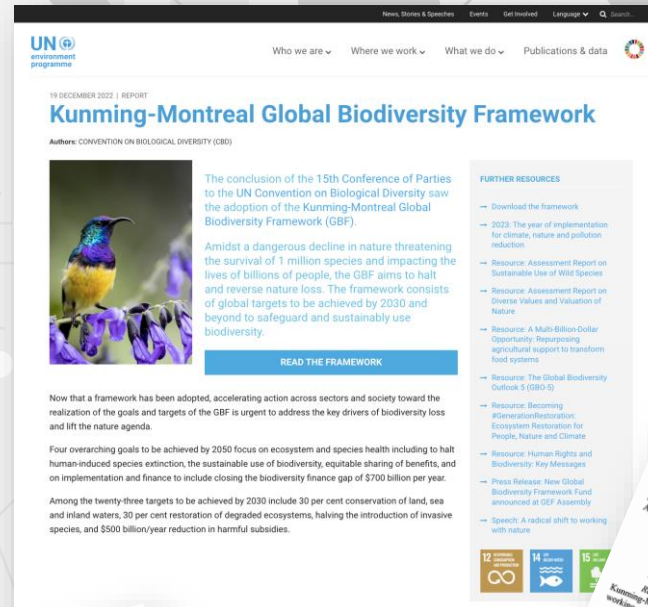
Support to Living in Harmony with Nature

GBF Indicators

- Coastal eutrophication potential
- Plastic debris density
- Food waste index
- Material footprint per capita

Assessments

- Making Peace with Nature
- Preventing the Next Pandemic
- What's Cooking?



B. Results: Science for Policy and Action

Support Towards a Pollution Free Planet

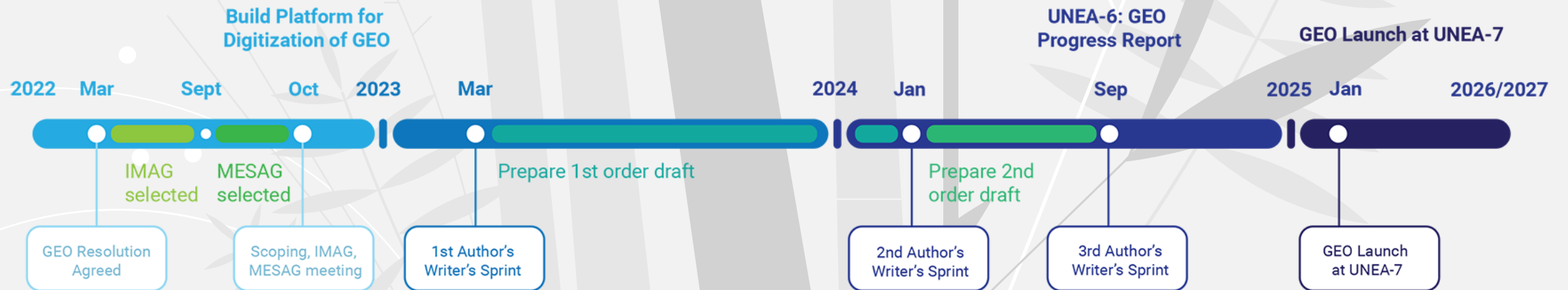
- Developing statistical guidelines on measuring flows of plastic along the lifecycle, providing policy-makers with high-quality statistics on plastics that are comparable at the national, regional and global levels to inform policies on responsible consumption and production, the circular economy and others.
- Identifying the best Remote Sensing Technology in generating data for presence of Plastic Patches greater than 10m in open ocean (areas beyond national jurisdiction).



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B. Expected Results: Science for Policy and Action

Solutions Pathways for Climate, Nature, Pollution: GEO-7

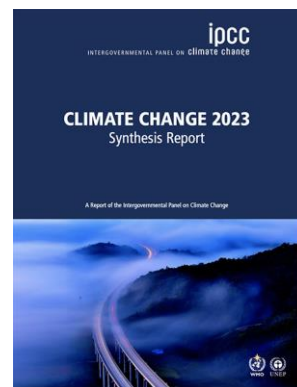
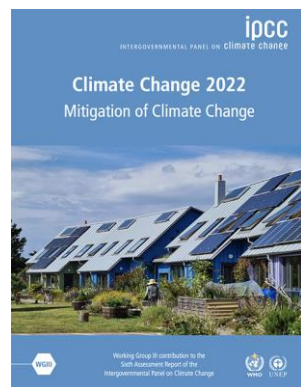


B. Results: Science for Policy and Action

Support to the Science-Policy Interface and Environmental Governance



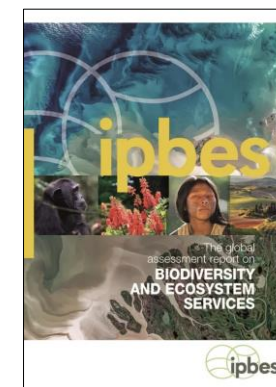
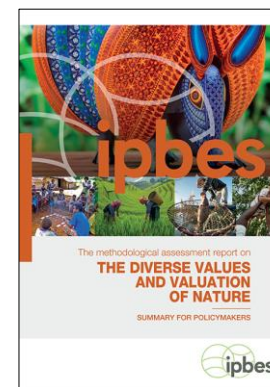
Intergovernmental Panel on Climate Change (IPCC)



UN environment programme



Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)



B. Results: Science for Policy and Action

UNEP Assessments contribute to Environmental Governance

UNEP Assessments inform COP negotiations

IPCC's *Sixth Assessment Report*, UNEP's *Emissions Gap Report* and *Adaptation Gap Reports* cited in the outcome document of UNFCCC COP 27.



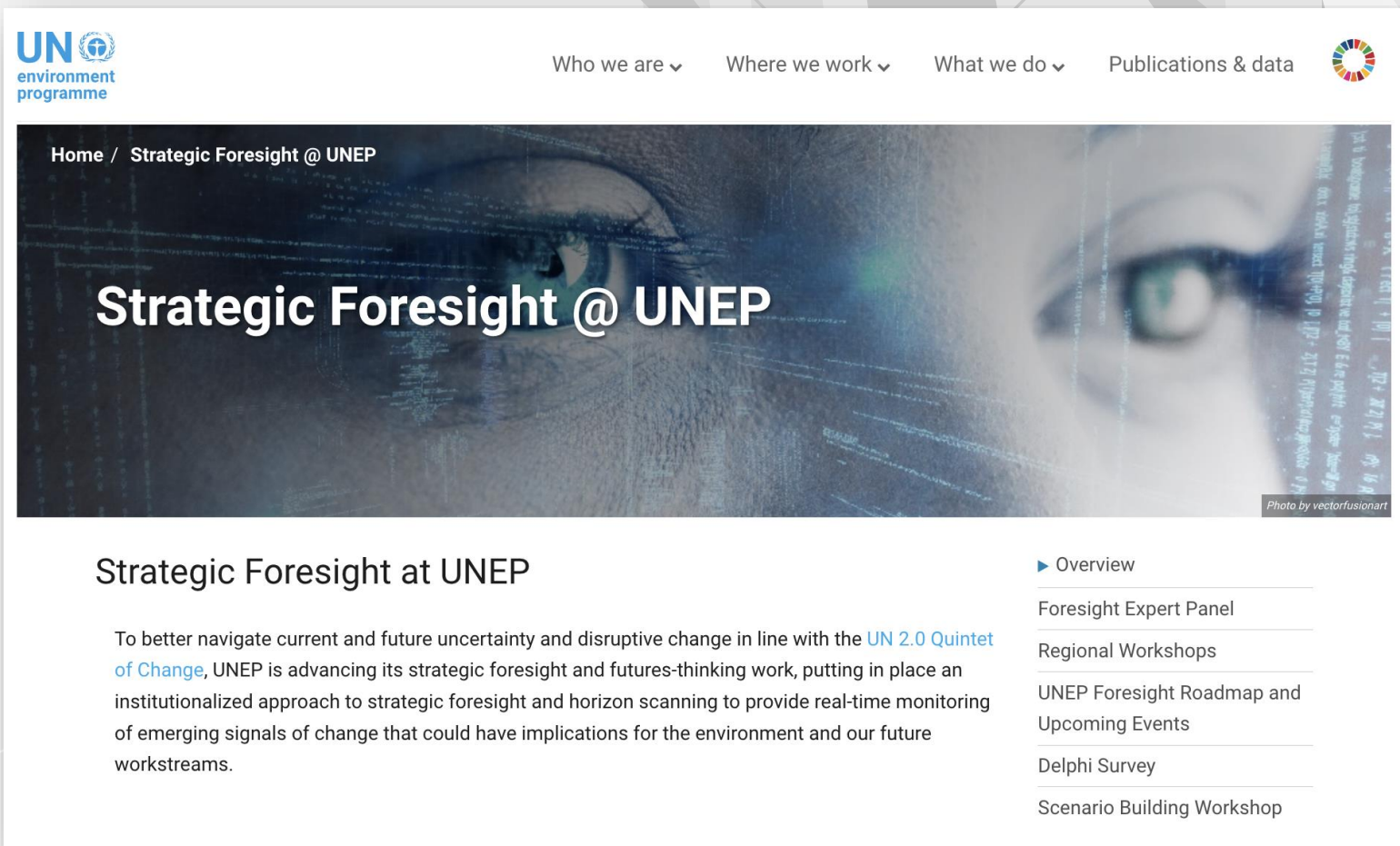
Sharm El-Sheikh Implementation Plan

I. Science and Urgency

4. Welcomes the contribution of Working Groups II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change;
5. Recognizes the importance of the best available science for effective climate action and policymaking;
6. Takes note of the 2022 adaptation gap and emissions gap reports of the United Nations Environment Programme, and recent global and regional reports of the World Meteorological Organization on the state of the climate.

B. Results: Science for Policy and Action

Cross-cutting Support



The screenshot shows the UNEP website header with navigation links: 'Who we are', 'Where we work', 'What we do', and 'Publications & data'. The main banner features a close-up of a person's eye with digital data overlays and the text 'Strategic Foresight @ UNEP'. Below the banner, the page title 'Strategic Foresight at UNEP' is followed by a paragraph explaining the organization's approach to strategic foresight and horizon scanning. A vertical list of links includes 'Overview', 'Foresight Expert Panel', 'Regional Workshops', 'UNEP Foresight Roadmap and Upcoming Events', 'Delphi Survey', and 'Scenario Building Workshop'.

UN environment programme

Who we are ▾ Where we work ▾ What we do ▾ Publications & data

Home / Strategic Foresight @ UNEP

Strategic Foresight @ UNEP

To better navigate current and future uncertainty and disruptive change in line with the [UN 2.0 Quintet of Change](#), UNEP is advancing its strategic foresight and futures-thinking work, putting in place an institutionalized approach to strategic foresight and horizon scanning to provide real-time monitoring of emerging signals of change that could have implications for the environment and our future workstreams.

- Overview
- Foresight Expert Panel
- Regional Workshops
- UNEP Foresight Roadmap and Upcoming Events
- Delphi Survey
- Scenario Building Workshop

- Development and implementation of a common methodology and approach to strategic foresight and horizon-scanning for issues that could disrupt and have implications for our workstreams

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B. Results: Science for Policy and Action

Contributions to Digital Transformation

- Contributing curated data and analytics to the WESR Platform
- Developing UNEP's first digital assessments
 - Measuring Progress – Water Related Ecosystems and the SDGs
 - GEO 7



C. Strategic Risks and Opportunities: Science for Policy and Action

Strategic Risks

- Limited outreach, advocacy, and political will to act on “what the science says”
- Financial Resources

Opportunities

- New commitments, e.g., *Global Biodiversity Framework*, the International legally binding instrument on plastic pollution (in preparation)

UNEP YEAR BOOK

EMERGING ISSUES IN OUR GLOBAL ENVIRONMENT

2011



United Nations Environment Programme



Plastic Debris in the Ocean

Every year large amounts of plastic debris enter the ocean, where it slowly fragments and accumulates in convergence zones. Scientists are concerned about the possible impacts of small plastic fragments—microplastics—in the environment. The role of plastics as a vector for transporting chemicals and species in the ocean is as yet poorly understood, but it is a potential threat to ecosystems and human health. Improved waste management is the key to preventing plastic and other types of litter from entering the ocean.

The ocean has become a global repository for much of the waste we generate. Marine debris includes timber, glass, metal and plastic from many different sources. Recently, the accumulation of microplastic particles in the ocean has been recognized as an emerging environmental issue. Scientists are increasingly concerned about the potential impact of releases of persistent bio-accumulating and toxic compounds (PBATs) from plastic debris. At the same time, the fishing and tourism industries in many parts of the world are affected economically by plastic, entering nets, fouling propellers and other equipment, and washing up on beaches. Despite international efforts to stem the flow of plastic debris, it continues to accumulate and impact the marine environment. To reduce the quantity of plastic entering the ocean, existing management instruments need to be made more effective and all aspects of waste treatment and disposal need to be improved.

Several common types of plastic are buoyant and have been transported by ocean currents to the remotest regions of the planet, including the Arctic and Antarctic (Barnes et al. 2010). Media attention has focused on reports of the relatively high incidence of plastic debris in areas of the ocean referred to as ‘convergence zones’ or ‘ocean gyres’. This has given rise to the widespread use of terms like ‘plastic soup’, ‘garbage patch’ and ‘ocean landfill’. Such terms are rather misleading in that much of the plastic debris in the ocean consists of fragments that are very small while the areas where they are floating are not, for example, distinguishable on satellite images. Nevertheless,

Microplastics are generally considered to be plastic particles smaller than 5 millimetres in diameter (Arthur et al. 2009).

Persistent, bio-accumulating and toxic substances (PBATs) disruption, mutagenicity and carcinogenicity. A subset is regulated under the Stockholm Convention on Persistent Organic Pollutants (POPs).

publicly resulting from media reports and from the activities of several NGOs has helped to raise public and political awareness of the global scale of the plastic debris problem, together with the larger issue of marine litter.

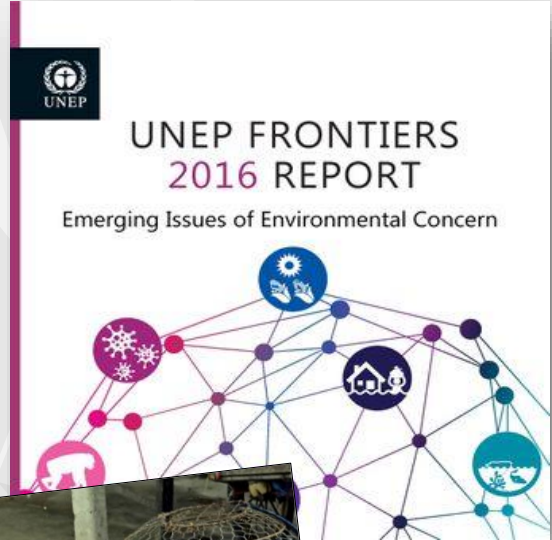
Assessing the extent of the problem

It is difficult to quantify the amounts and sources of plastic and other types of debris entering the ocean. Land-based sources include poorly managed landfills, riverine transport, untreated sewage and storm water discharges, industrial and manufacturing facilities with inadequate controls, and blown debris, recreational debris, and tourist activities (Barnes et al. 2009). These sources are thought to dominate the overall supply of marine debris, but there are important regional variations. For example, Asian Seas region and the southern North Sea (UNEP/CORSEA 2009; Galgani et al. 2010). In general, more litter is found closer to population centres, including a greater proportion of consumer plastic items such as bottles, shopping bags and personal hygiene products (Ocean Conservancy 2010).

The greatest technological development of modern plastics occurred during the first half of the 20th century. Their production and use have continued to expand rapidly up to the present day for packaging (Box 1). A major benefit of their use in the food industry is that it can extend shelf life, thus decreasing the risk of infection and reducing food waste.

Ship- and platform-based sources of plastic litter in the ocean include fishing and recreational vessels, cruise liners, merchant shipping, oil and gas platforms, and aquaculture facilities (Figure 2).

Authors: Peter Kershaw (lead), Saiko Katsuhika, Sargam Iyer, Jon Samwell and Doug Woodcock
Science writer: John Small



Zoonoses: Blurred Lines of Emergent Disease and Ecosystem Health

Emerging and neglected zoonotic diseases

The 20th century was a period of unprecedented ecological change, with dramatic reductions in natural ecosystems and biodiversity and equally dramatic increases in people and domestic animals. Never before have so many animals been kept by so many people—and never before have so many opportunities existed for pathogens to pass from wild and domestic animals through the biophysical environment to affect people causing zoonotic diseases or zoonoses. The result has been a worldwide increase in emerging zoonotic diseases, outbreaks of epidemic zoonoses as well as a rise in foodborne zoonoses globally, and a troubling persistence of neglected zoonotic diseases in poor countries.

Around 60 per cent of all infectious diseases in humans are ‘zoonotic’ as are 75 per cent of all emerging infectious diseases. On average, one new infectious disease emerges in humans every four months. While many originate in wildlife, livestock often serve as an epidemiological bridge between wildlife and human infections. This is especially the case for intensively reared livestock which are often genetically similar within a herd or flock and therefore lack the genetic diversity that provides resilience: the result of being bred for production characteristics rather than disease resistance. An example of livestock acting as a ‘disease bridge’ is the case of bird flu or swine influenza pathogens, which first circulated in wild birds, then infected domestic poultry and from them passed to humans. The

D. Looking Ahead: Science for Policy and Action

United Nations General Assembly Resolution 2997, 1972 ESTABLISHING UN ENVIRONMENT:

2. *Decides* that the Governing Council shall have the following main functions and responsibilities:

(a) To promote international co-operation in the field of the environment and to recommend, as appropriate, policies to this end;

(b) To provide general policy guidance for the direction and co-ordination of environmental programmes within the United Nations system;

(c) To receive and review the periodic reports of the Executive Director of the United Nations Environment Programme, referred to in section II, paragraph 2, below, on the implementation of environmental programmes within the United Nations system;

(d) To keep under review the world environmental situation in order to ensure that emerging environmental problems of wide international significance receive appropriate and adequate consideration by Governments;

(e) To promote the contribution of the relevant international scientific and other professional communities to the acquisition, assessment and exchange of environmental knowledge and information and, as appropriate, to the technical aspects of the formulation and implementation of environmental programmes within the United Nations system;



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Thank you

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